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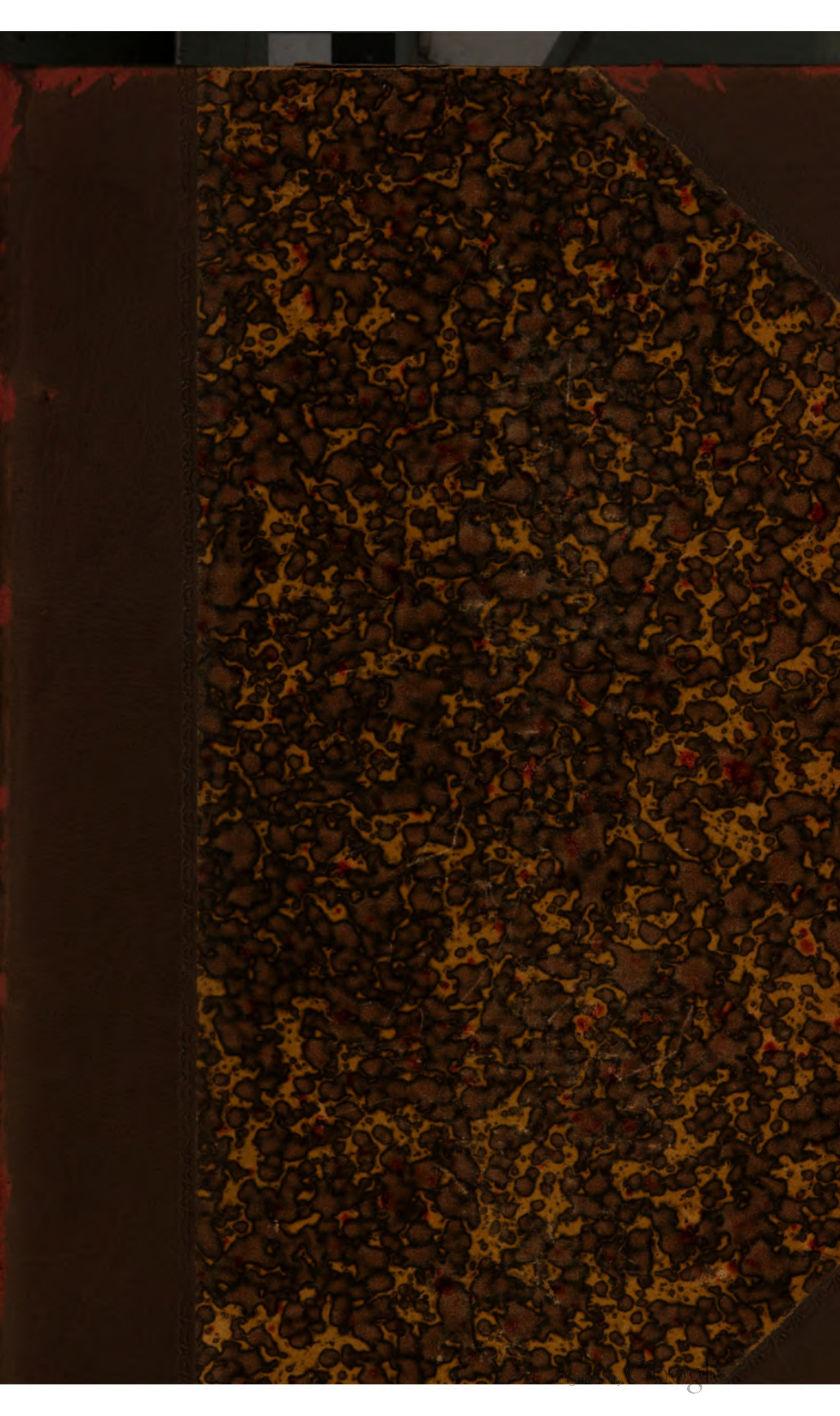
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1892

REPORT AND TRANSACTIONS
OF THE
DEVONSHIRE ASSOCIATION

FOR
THE ADVANCEMENT OF SCIENCE, LITERATURE,
AND ART.

[PLYMQUTH, JULY, 1916.]

VOL. XLVIII.
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CONTENTS.

	Page
List of Plates	7
List of Officers	8
Places of Meeting	9
Rules	10
Bye-laws and Standing Orders	15
Report of the Council	19
Balance Sheet	22, 23
Selected Minutes of Council appointing Committees	24-26
Proceedings at the Fifty-fifth Annual Meeting	27
Obituary Notices	43
President's Address	55
Twenty-ninth Report of the Committee on Verbal Provincialisms	85
Thirty-fifth Report of the Committee on Barrows in Devonshire	99
Seventh Report of the Church Plate Committee	101
Eighth Report of the Botany Committee	137
First Report of the Committee on Bibliography	154
Thirty-fourth Report [3rd Ser.] of the Committee on the Climate of Devon	157
The Athelstan Myth. J. J. Alexander, M.A., J.P.	174
A History of Puslinch. J. Y. A. Morshead	180
Totnes Castle and Walled Town. H. Michell Whitley	189
Robert Wenynghton: an Old "Sea-Dog" of Devon. Colonel E. T. Clifford, V.D.	199
The Dunstones of Plymouth and the Compton-Efford Grit. A Geological Resurvey. R. Hansford Worth, M.INST.C.E., F.G.S.	217
The Canon in Residence. Rev. J. B. Pearson, D.D.	260
The Orthoptera of Devon. C. W. Bracken, B.A., F.E.S.	267
Twelve Months' Notes on the Birds of the South Hams District. E. A. S. Elliot, M.R.C.S., M.B.O.U.	283

	Page
Southcott of Dulcishayes, Kilmington. An Extension of the Pedigree as given by <i>Vivian</i> , page 698. A. J. P. Skinner . . .	290
The Baptismal Fonts of Devon. Part IV. Miss Kate M. Clarke . .	302
Devon County Members of Parliament. Part V. J. J. Alexander, M.A., J.P.	320
Kairpen-Huelgoit; which is called Exeter. John May Martin, c.e. .	341
List of Members	363
Index	379

PLATES.

OBITUARY NOTICES—

Rev. William Henry Thornton, M.A.	To face p. 49
-----------------------------------	---------------

BARROW REPORT—

Re-erecting Brisworthy Circle	99
Brisworthy Circle after Restoration. View—Looking N.W.	99
Plan of Brisworthy Circle	100

CHURCH PLATE REPORT—

Chalice. Ashwater. By I. L., Exeter. Circ. A.D. 1630	104
Wine Cup. West Putford. Restoration Period	111
Chalice. East Putford. By J. Cotton, Barnstaple. Circ. A.D. 1576	111
Stoneware Flagon. Pyworthy. Late Sixteenth Century	112
Chalice. Broadwoodwiger. By I. V., Exeter. A.D. 1576	112
Standing Cup. Buckland Filleigh. A.D. 1599	118
Oval Pierced Work Bowl. Buckland Filleigh. Early Seventeenth Century	119
Standing Cup. Petersmarland. A.D. 1595	127
Paten. Yarnscombe. By T. Matthew, of Barnstaple	132

TOTNES CASTLE AND WALLED TOWN—

Totnes Castle and Town Walls in Mediæval Times	193
--	-----

ROBERT WENYNGTON: AN OLD "SEA-DOG" OF DEVON—

Dartmouth Haven shortly after Wenyngton's Time. (From a chart in the British Museum)	199
--	-----

THE DUNSTONES OF PLYMOUTH, ETC.—

Plates I. to V.	Between pp. 258, 259
-----------------	----------------------

THE ORTHOPTERA OF DEVON—

Figs. 1, 2, 3. <i>Anisolabis annulipes</i> , Lucas	To face p. 282
Figs. 4, 5, 6, 7. <i>Conocephalus dorsalis</i> , Latr.	282

BAPTISMAL FONTS OF DEVON—

Plate I.	Fonfs at Monkleigh, Twichen, and East Putford	303
" II.	" Harberton and Bideford	305
" III.	" Beaford, Abbotsham, and Parkham	307
" IV.	" Clayhanger and Bradford	309
" V.	" Southpool, Rattery, and Dittisham	311
" VI.	" Loddiswell, Paignton, and Buckfastleigh	312
" VII.	" Ugborough and Blackauton	314
" VIII.	" Thurlestone and Wolborough	315
" IX.	" South Brent and Ashprington	316
" X.	" Cornworthy and Dartmouth (St. Petrock)	317
" XI.	" Denbury and Plymstock	318

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OF

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1863. PLYMOUTH . . .	C. Spence Bate, Esq., F.R.S., F.L.S.
1864. TORQUAY . . .	E. Vivian, Esq., M.A.
1865. TIVERTON . . .	C. G. B. Daubeny, M.D., LL.D., F.R.S.
1866. TAVISTOCK . . .	Earl Russell, K.G., K.G.C., F.R.S., etc.
1867. BARNSTAPLE . . .	W. Pengelly, Esq., F.R.S., F.G.S.
1868. HONITON . . .	J. D. Coleridge, Esq., Q.C., M.A., M.P.
1869. DARTMOUTH . . .	G. P. Bidder, Esq., C.E.
1870. DEVONPORT . . .	J. A. Fronde, Esq., M.A.
1871. BIDEFORD . . .	Rev. Canon C. Kingsley, M.A., F.L.S., F.G.S.
1872. EXETER . . .	The Lord Bishop of Exeter (Dr. Temple).
1873. SIDMOUTH . . .	Right Hon. S. Cave, M.A., M.P.
1874. TEIGNMOUTH . . .	The Earl of Devon.
1875. TORRINGTON . . .	R. J. King, Esq., M.A.
1876. ASHBURTON . . .	Rev. Treasurer Hawker, M.A.
1877. KINGSBRIDGE . . .	Ven. Archdeacon Earle, M.A.
1878. PAIGNTON . . .	Sir Samuel White Baker, M.A., F.R.S., F.R.G.S.
1879. ILFRACOMBE . . .	Sir R. P. Collier, M.A.
1880. TOTNES . . .	H. W. Dyke Acland, M.A., M.D., LL.D., F.R.S.
1881. DAWLISH . . .	Rev. Professor Chapman, M.A.
1882. CREDITON . . .	J. Brooking-Rowe, Esq., F.S.A., F.L.S.
1883. EXMOUTH . . .	Very Rev. C. Merivale, D.D., D.C.L.
1884. NEWTON ABBOT . . .	Rev. T. R. R. Stebbing, M.A.
1885. SEATON . . .	R. F. Weymouth, Esq., M.A., D.Lit.
1886. ST. MARYCHURCH . . .	Sir J. B. Phear, M.A., F.G.S.
1887. PLYMPTON . . .	Rev. W. H. Dallinger, LL.D., F.R.S., F.L.S., etc.
1888. EXETER . . .	Very Rev. Dean Cowie, D.D.
1889. TAVISTOCK . . .	W. H. Hudleston, Esq., M.A., F.R.S., F.G.S., etc.
1890. BARNSTAPLE . . .	Lord Clinton, M.A.
1891. TIVERTON . . .	R. N. Worth, Esq., F.G.S.
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1905. PRINCETOWN . . .	Basil H. Thomson, Esq.
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1910. CULLOMPTON . . .	John D. Enys, Esq., F.G.S.
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1916. PLYMOUTH . . .	E. J. Allen, Esq., D.Sc., F.R.S.

RULES.

1. THE Association shall be called the Devonshire Association for the Advancement of Science, Literature, and Art.

2. The objects of the Association are—To give a systematic direction to scientific inquiry in Devonshire; and to promote the intercourse of those who cultivate Science, Literature or Art, in different parts of the county.

3. The Association shall consist of Members and Honorary Members.

4. Every candidate for membership, on being nominated by a member to whom he is personally known, shall be admitted by the General Secretary, subject to the confirmation of the General Meeting of the Members.

5. Every person, admitted to membership under Rule 4, shall forthwith receive intimation that he has been admitted a Member, subject to confirmation at the next General Meeting of Members; and the fact of the newly admitted Member's name appearing in the next issue of the printed List of Members, will be a sufficient intimation to him that his election has been confirmed. Pending the issue of the volume of Transactions containing the Rules of the Association, the newly admitted Member shall be furnished by the General Secretary with such extracts from the Rules as he shall deem necessary.

6. Persons of eminence in Science, Literature, or Art, or those who have rendered any special service to the Association, may, at a General Meeting of the Members, be elected Honorary Members of the Association: but such Honorary Members shall not be entitled to take any part in the management of the Association.

7. Every *Member* shall pay an Annual Subscription of Half a Guinea or a Life Composition Fee of Seven and a Half Guineas. But Members of not less than Ten Years' standing, whose Subscriptions are not in arrear, may compound by a single payment of Five Guineas.

8. Annual Subscriptions shall be payable in advance, and shall

be due in each year on the first day of January ; and no person shall have the privileges of a Member until the Subscription for the current year or a Life Composition has been paid.

9. Any Member who does not, on or before the first day of January, give notice, in writing, to the General Secretary of his intention to withdraw from the Association, shall be regarded as a Member for the ensuing year.

10. Whenever a Member is in arrear in the payment of his Annual Subscription, the Treasurer shall apply to him for the same.

11. Whenever, at an Annual Meeting, a Member shall be two years in arrear in the payment of his Annual Subscriptions, the Council may, at its discretion, erase his name from the List of Members.

12. Every *Member*, whose Subscriptions are not in arrear, shall be entitled to a copy of the volume of the Transactions for the year.

13. Every *Member* shall be entitled to a lady's ticket for the Annual Meeting.

14. Only ladies shall be eligible for admission as Associates to an Annual Meeting, on payment of the sum of Five Shillings each.

15. The Association shall meet annually, at such a time in July or August and at such place as shall be decided at a previous Annual Meeting.

16. One month at least before the Annual Meeting each Member shall be informed by the General Secretary, by circular, of the place and date of the Meeting.

17. The affairs of the Association shall be managed by a Council, which shall consist exclusively of the following Members of the Association :—

(a) Those who fill, or have filled, or are elected to fill, the offices of President, General and Local Treasurers, General and Local Secretaries, and Secretaries of Committees appointed by the Council.

(b) Authors of papers which have been printed *in extenso* in the Transactions of the Association.

The Council so constituted shall have power to make, amend, or cancel the Bye-laws and Standing Orders.

18. With the exception of the ex-Presidents, every Councillor who has not attended any Meeting of the Council for twenty-four calendar months, shall forfeit his place as a Councillor, but it shall be competent for him to recover it by a fresh qualification.

19. The Council shall hold a meeting at Exeter in the month of February in each year, on such day as the General Secretary shall appoint, for the due management of the affairs of the Association.

20. In the intervals of the Annual Meetings, all Meetings of the Council shall be held at Exeter, unless some other place shall have been decided on at a previous Council Meeting.

21. Every Meeting of the Council shall be convened by circular, sent by the General Secretary to each Member of the Council not less than ten days before the Meeting is held.

22. The General Secretary, or any four Members of the Council, may call extraordinary Meetings of their body for any purpose requiring their present determination, by notice under his or their hand or hands, addressed to every other Member of the Council, at least ten clear days previously, specifying the purpose for which such extraordinary Meeting is convened. No matter not so specified, and not incident thereto, shall be determined at any extraordinary Meeting.

23. The officers of the Association shall be a President, two or more Vice-Presidents, a General Treasurer, one or more General Secretaries, one or more Auditors, a Local Treasurer, and one or more Local Secretaries.

24. A Committee shall be appointed annually by the Council to consider at what place the Association shall hold its Annual Meeting, and who shall be invited to fill any official vacancies which may from time to time occur, as follows :—

(a) The President subject to confirmation by the Council.

(b) All other officers (except Vice-Presidents, the Local Treasurer, and Local Secretary or Secretaries) subject to confirmation at a General Meeting of the Members of the Association.

25. The Vice-Presidents, Local Treasurer, and Local Secretary or Secretaries shall be elected by the local Reception Committee appointed by the Authorities of the city or town issuing the invitation to the Association, subject to confirmation by the Council of the Association; and the Council shall have power to add to the number of Vice-Presidents elected by the Local Authorities from among the Members of the Association.

26. The President shall enter on his duties at the Annual Meeting for which he has accepted office: the General Treasurer, General Secretary or Secretaries, the Vice-Presidents and Local Officers shall enter on their duties as soon as convenient after their election.

27. The Council shall have power to fill any official vacancy which may occur in the intervals of the Annual Meetings, on the recommendation of the Committee appointed under Rule 24.

28. The President shall be eligible for re-election, provided that the same person does not hold office in two consecutive years.

29. The General Treasurer shall receive all sums of money due to the Association ; he shall pay all accounts due by the Association after they shall have been examined and approved ; and he shall report to each Meeting of the Council the balance he has in hand, and the names of such Members as shall be in arrear, with the sums due respectively by each.

30. The Accounts of the Association shall be audited annually, by one or more Auditors appointed at each Annual Meeting, but who shall not be *ex-officio* Members of the Council.

31. All investments of the funds of the Association shall be made in the names of three trustees to be elected by the Council, in securities authorized by law for the investment of Trust Funds.

32. The Association shall have the right at its discretion of printing *in extenso* in its volume of Transactions all papers read at the Annual Meeting. The copyright of a paper read before any Meeting of the Association, and the illustrations of the same which have been provided at his expense, shall remain the property of the Author ; but he shall not be at liberty to print it, or allow it to be printed elsewhere, either *in extenso* or in abstract amounting to as much as one-half of the length of the paper, until after the issue of the volume of Transactions in which the paper is printed.

33. The Association shall, within a period not exceeding six months after each Annual Meeting, issue to each Member and Honorary Member its volume of Transactions, which shall include the Rules, a Financial Statement, a List of the Members, the Report of the Council and of the Proceedings, the President's Address, and such Papers, in abstract or *in extenso*, read at the Annual Meeting, as the Council shall decide to print, together with, if time allows, an Index to the volume.

34. Should the extra charges for small type, and types other than those known as Roman or Italic, and for the author's corrections of the press, in any paper printed in the Transactions, amount to a greater sum than in the proportion of ten shillings per sheet, such excess shall be borne by the author himself, and not by the Association ; and should any paper exceed three sheets, the cost beyond the cost of the three sheets shall be borne by the author of the paper.

35. If proofs of papers to be printed in the Transactions are sent to authors for correction, and are retained by them beyond four days for each sheet of proof, to be reckoned from the day

marked thereon by the printers, but not including the time needful for transmission by post, such proofs shall be assumed to require no further correction.

36. The authors of papers printed in the Transactions shall, within seven days after the Transactions are issued, receive twenty-five private copies free of expense, and shall be allowed to have any further number printed at their own expense. All arrangements as to such extra copies shall be made by the authors with the printers of the Association. The Honorary Secretaries of Committees for special service for the Association, may, on application, be supplied with fifteen additional copies, free of expense, should they be required, of the Reports of their Committees printed in the Transactions.

37. No Rule shall be altered, amended, or new Rule added, except at an Annual General Meeting of Members, and then only provided that notice of the proposed change has been given to the General Secretary, and by him communicated to all the Members at least one month before the Annual General Meeting.

38. Throughout the Rules, Bye-laws, and Standing Orders where the singular number is used, it shall, when circumstances require, be taken to include the plural number, and the masculine gender shall include the feminine.

BYE-LAWS AND STANDING ORDERS.

1. It is desirable that a copy of the President's Address shall be in the hands of the General Secretary not later than the twenty-fourth day of June in each year, in order that it may be printed and distributed to the Press in time for publication in newspapers issued on the day after its delivery. The President's Address shall be considered a confidential document until after its delivery.

2. Papers to be read at the Annual Meetings must strictly relate to Devonshire, and the procedure for the submission, selection and reading of papers shall be as follows :—

(a) Papers and Reports of Committees to be read at any Meeting, together with all drawings, photographs, maps, etc., to illustrate the same, must be submitted to the General Secretary, so as to reach him not later than the twenty-fourth day of June in each year.

(b) All Papers and illustrations considered unsuitable shall be returned to the authors as soon as possible.

(c) The General Secretary will obtain from the printers of the Association for presentation to the Council a statement showing the number of pages each Paper and Report will occupy when printed, the estimated extra cost of printing tables, of the use of special type or change of type, and of all other extra charges, if any, in each Paper and Report, as well as the estimated cost of all charges connected with the preparation, binding and issue of the volume of Transactions.

(d) The General Secretary will communicate the printers' report and estimates to the Council, at the Meeting of that body on the first day of the Annual Meeting. The Council will then select the Papers and Reports to be read on the two following days.

3. Papers which have already been printed *in extenso* cannot be accepted unless they form part of the literature of a question on which the Council has requested a Member or Committee to prepare a Report.

4. The reading of any Report or Paper shall not exceed twenty minutes, or such part of twenty minutes as shall be decided by the

Council as soon as the Programme of Reports and Papers shall have been settled, and in any discussion which may arise no speaker shall be allowed to speak more than five minutes.

5. The Council will arrange Papers for reading to meet the convenience of the authors, as far as possible. Papers shall be read in the order appointed by the Council, but in the event of the author of any Paper not being present to read his Paper, and in the absence of any arrangement by the author of a Paper for its reading by some Member present at the meeting, such Paper or Papers, if more than one, shall be held over till the conclusion of the reading of the Papers, when it shall be put to the vote of the Meeting whether such Paper or Papers shall be read by substitute or not.

6. Papers which have been accepted by the Council cannot be withdrawn without the consent of the Council.

7. Papers communicated by Members for Non-Members, and accepted by the Council, shall be placed in the List of Papers for reading below those furnished by Members themselves.

8. In the event of there being at an Annual Meeting more Papers than can be disposed of in one day, the reading of the residue shall be continued on the day following.

9. At the close of the Annual Meeting in every year there shall be a Meeting of the Council, and the Council shall then decide what Reports and how many of the Papers accepted for reading the funds of the Association, as reported by the Treasurer, will permit of being printed in the volume of Transactions.

10. All Papers read to the Association which the Council shall decide to print *in extenso* in the Transactions, shall be sent to the printers, together with all drawings required for illustrating them, as soon as possible after the close of the Annual Meeting at which they were read.

11. All Papers read to the Association which the Council shall decide not to print *in extenso* in the Transactions, shall be returned to the authors as soon as possible after the close of the Annual Meeting at which they were read ; and abstracts of such Papers to be printed in the Transactions shall not exceed such length as the General Secretary shall suggest in each case, and must be sent to him within seven days after such Paper has been returned to the author.

12. The printers shall print the Papers in the volume of Transactions in the order in which they were read, unless there is any special reason for the contrary, and shall return every Manuscript to the author as soon as it is in type, *but not before*. They shall be returned *intact*, provided they are written on one side of the paper only and each sheet numbered.

13. Excepting mere verbal alterations, no Paper which has been read to the Association shall be added to without the written approval and consent of the General Secretary, or in the event of there being two Secretaries of the one acting as Editor; and no additions shall be made except in the form of footnotes or brief postscripts, or both.

14. The author of every Paper which the Council at any Annual Meeting shall decide to print in the Transactions shall pay for the preparation of all such illustrations as in his judgment and that of the Council the said Paper may require. That is to say, he shall pay for the preparation of all necessary drawings, blocks, lithographic transfers or drawings on stone; but the Association will bear the cost of printing (by the Association's printers), paper and binding; provided that should any such illustrations be in colours or of a size larger than can be inserted in the volume with a single fold, or be desired to be executed in any other process than printing from the block or lithography, then in each and either of these cases the author shall himself bear the whole cost of production and printing, and should the Council so decide shall also pay any additional charge that may properly be made for binding.

15. The pagination of the Transactions shall be in Arabic numerals exclusively, and carried on consecutively, from the beginning to the end of each volume; and the Transactions of each year shall form a distinct and separate volume.

16. The Council shall from time to time, when deemed advisable, revise the prices fixed for each volume of the Transactions and all other publications of the Association.

17. The General Secretary shall report to each Annual Meeting of the Members the number of copies in stock of each volume of the Transactions, and other publications of the Association, with the price per copy of each volume; and such Report shall be printed in the Transactions.

18. The General Secretary shall prepare brief Obituary Notices of Members deceased during the previous year, and such notices shall be printed in the Transactions.

19. All Resolutions appointing Committees for special service for the Association shall be printed in the Transactions.

20. The following are the Rules for reprinting Reports of Committees other than the reprints supplied to authors under Rule 36:—

(a) The printers of the Association alone are permitted to reprint any Report.

(b) The written permission of the General Secretary is required

before any Report may be reprinted, the copyright of all Reports printed in the Transactions being vested in the Association. .

(c) The printers shall pay to the General Secretary on behalf of the Association, as royalty, a sum of sixpence per fifty copies for each half-sheet of eight pages, any number of copies less than fifty or between two exact multiples of fifty being regarded as fifty, and any number of pages less than eight or between two exact multiples of eight, being regarded as eight.

(d) Each copy of the reprint shall have printed on the first page the words, "Reprinted from the Transactions of the Devonshire Association for the Advancement of Science, Literature, and Art, for _____ by permission of the Council of the Association," the year in which the Report was originally printed being indicated.

(e) The reprint shall be an exact copy of the Report as originally printed in the Transactions, without addition, abridgment or modification, the necessary corrections for printer's errors and changes in pagination alone excepted.

21. An amount not less than eighty per cent. of all Compositions received from Life Members of the Association shall be invested.

22. At each of its Ordinary Meetings the Council shall deposit at interest, in such bank as they shall decide on, and in the names of the General Treasurer and General Secretary of the Association, all uninvested Compositions received from Life Members, all uninvested prepaid Annual Subscriptions, and any part, or the whole of the balance derived from other sources which may be in the Treasurer's hands after providing for all accounts passed for payment at the said Meeting.

23. The General Secretary is authorized to spend any sum not exceeding *Twenty Pounds* per annum in employing a clerk for such work as may be found necessary, and any sum not exceeding *Two Guineas* for the preparation of an Index to each annual volume of the Transactions.

24. Only Members and Ladies holding Ladies' tickets are admitted to the Association Dinner, when one is held. Members and Ladies intending to dine must send in their names to the Honorary Local Secretary not less than two clear days before the date of the Dinner.

REPORT OF THE COUNCIL.

Presented to the General Meeting held at Plymouth, 18th July, 1916.

THE Council have the honour to present their Report for the past year.

The ordinary meetings of the Council were held at Exeter on the 20th and 22nd July, 1915, and 29th February, 1916.

Owing to circumstances arising out of the War, the local authorities of Lyme Regis were obliged to withdraw their invitation to the Association to hold the meeting of 1916 in that town. In order, therefore, to transact the necessary business of the Association and to preserve the continuity of the *Transactions*, it was decided to hold the meeting of 1916 in Plymouth. Mr. H. Michell Whitley was appointed an additional General Secretary of the Association and also an additional Secretary of the Committee for considering at what place the Association shall hold its annual meetings and who shall be invited to fill any official vacancy or vacancies which may occur.

The National Library of Wales, Aberystwyth, at the special request of its Council, was added to the list of Societies and Institutions receiving free copies of the *Transactions* of this Association.

The thanks of the Council were conveyed to authors of Papers who presented Plates of Illustrations to their Papers printed in Vol. XLVII of the *Transactions*.

The Council also have to report that through the instrumentality of the Rev. J. F. Chanter, Secretary of the Church Plate Committee of the Devonshire Association, and the good offices of Mr. A. F. G. Leveson-Gower, F.S.A., a silver flagon of the time of Charles I (presented to Sowton Parish Church in 1703 by William Beavis, of Farrington)

having been put up for sale at Messrs. Christies' Saleroom on 10th April, 1916, but for the alienation of which no faculty existed, was restored to the Parish Church of Sowton. It should be noted, however, that no one living is responsible for the alienation.

A copy of Vol. XLVII of the *Transactions* has been sent to every Member not in arrear with his subscription, and to the following Societies: the Linnean Society, the Royal Institution, the Royal Anthropological Institute, the Geological Society, the Library of the British Museum, the Natural History Museum (Cromwell Road), the Bodleian Library, the University Library, Cambridge, the Devon and Exeter Institution, the Plymouth Institution, the Natural History Society, Torquay, the North Devon Athenæum, Barnstaple, the Royal Institution of Cornwall, Truro, the Somersetshire Archæological and Natural History Society, Taunton, the Dorset Natural History and Antiquarian Field Club (c/o Rev. Herbert Pentin, M.A., Hon. Secretary, St. Peter's Vicarage, Portland); the National Library of Wales, Aberystwyth, and to the *Athenæum* newspaper on special application for the *Subject Index of Periodicals*.

The stock of *Transactions*, *Wills*, etc., now in hand is as follows:—

1902	Transactions, Vol. XXXIV	.	58	copies.
	Wills, Part IV	.	62	"
	Index to Vol. XXXIV	.	80	"
1903	Transactions, Vol. XXXV	.	25	"
	Wills, Part V	.	24	"
1904	Transactions, Vol. XXXVI	.	41	"
	Wills, Part VI	.	41	"
1905	Transactions, Vol. XXXVII	.	57	"
	Wills, Part VII	.	58	"
1906	Transactions, Vol. XXXVIII	.	21	"
	Wills, Part VIII	.	24	"
1907	Transactions, Vol. XXXIX	.	60	"
	(No Wills issued)			
1908	Transactions, Vol. XL	.	68	"
	Wills, Part IX	.	66	"
1909	Transactions, Vol. XLI	.	58	"
	(No Wills issued)			
1910	Transactions, Vol. XLII	.	43	"
	Wills, Part X	.	62	"
1911	Transactions, Vol. XLIII	.	33	"
	Wills, Part XI	.	59	"

REPORT OF THE COUNCIL.

21

1912	Transactions, Vol. XLIV . . .	25 copies.
	Wills, Part XII . . .	7 „
1913	Transactions, Vol. XLV . . .	49 „
	(No Wills issued)	
1914	Transactions, Vol. XLVI . . .	51 „
	Wills, Part XIII . . .	57 „
1916	Transactions, Vol. XLVII . . .	120 „

MAXWELL ADAMS,

H. MICHELL WHITLEY,

Hon. General Secretaries.

Treasurer's Receipts and Expenditure for the

1915.	Receipts.	£	s.	d.	£	s.	d.
By Subscriptions :—							
1913 (3)	.	1	11	6			
1914 (17)	.	8	18	6			
1915 (364)	.	191	2	0			
Bank Associates (1)	.	0	5	0			
					201	17	0
„ Life Compositions (2)	.				10	10	0
„ Dividends—							
£400 India 3 per cent Stock .	.	10	10	6			
£300 Consols .	.	6	13	0			
Bank Interest .	.	2	8	2			
					19	11	8
Authors' Extras under Rule 34 :—							
„ Miss Weekes .	.	0	2	4			
„ Miss K. Clarke .	.	0	12	0			
„ Mr. H. Michell Whitley .	.	0	5	0			
„ Mr. A. L. Radford .	.	1	1	4			
„ Mr. A. G. Duncan .	.	0	13	4			
„ Mr. W. Blake .	.	0	11	0			
„ Dr. E. A. S. Elliot .	.	0	8	0			
					3	13	0
„ Donations towards Papers .	.				7	15	6
„ Discount from Messrs. Brendon and Son, Ltd. .	.	9	0	11			
„ Sale of Transactions .	.	0	15	5			
					9	16	4
					£253	3	6
„ Balance from 1914 .	.				39	7	3
					£292	10	9

JOHN S. AMERY, *Hon. Treasurer.*

Year ending the 31st day of December, 1915.

1915.	Expenditure.	£	s.	d.	£	s.	d.
To Messrs. Brendon and Son, Ltd., Printing Notices, Circulars, etc.		6	10	7			
„ Dent, £1 4s. 4d. ; Pearse, 6s. 2d.		1	10	6			
					8	1	1
„ Secretary's Expenditure		16	0	10			
„ and Clerical Assistance		20	10	5			
„ Treasurer's Expenditure		3	10	6			
					40	1	9
„ Subscription to Devon and Exeter Institution					5	5	0
„ Messrs. Brendon and Son, Ltd. :—							
Printing Vol. XLVII, 610 copies, 440 pp.		156	3	0			
Authors' Reprints, 25 copies each		12	2	6			
Addressing, packing, and postage		20	5	5			
					188	10	11
„ Insurance of Stock to 31st December, 1916					1	1	0

	£242	19	9
Balance (1915)	49	11	0
	£292	10	9

Examined with Vouchers and found to be correct, with a balance of £49 11s. 0d. in favour of the Association. Dated this 8th day of July, 1916.

(Signed) ROBERT C. TUCKER, Auditor.

SELECTED MINUTES OF COUNCIL APPOINTING COMMITTEES.

Passed at the Meeting at Plymouth, 18th July, 1916.

THAT Mr. Maxwell Adams, Mr. Robert Burnard, Sir A. Croft, Sir Roper Lethbridge, Lady Radford, and Mr. H. Michell Whitley be a Committee for the purpose of considering at what place the Association shall hold its Annual Meetings, and who shall be invited to fill any official vacancy or vacancies which may occur; and that Mr. Maxwell Adams and Mr. H. Michell Whitley be the Secretaries.

That Mr. J. S. Amery, Mr. Robert Burnard, Mr. G. M. Doe, Mr. E. A. S. Elliot, Mr. H. Montagu Evans, and Mr. H. B. S. Woodhouse be a Committee for the purpose of noting the discovery or occurrence of such facts in any department of scientific inquiry, and connected with Devonshire, as it may be desirable to place on permanent record, but which may not be of sufficient importance in themselves to form the subjects of separate papers; and that Mr. G. M. Doe be the Secretary.

That Rev. S. Baring-Gould, Mr. R. Pearse Chope, Mr. G. M. Doe, Mr. T. Cann Hughes, Mr. J. S. Neck, Lady Radford, Mrs. Rose-Troup, and Mr. H. B. S. Woodhouse be a Committee for the purpose of collecting notes on Devonshire Folk-lore; and that Lady Radford be the Secretary.

That Mr. J. S. Amery, Rev. J. F. Chanter, Mr. R. Pearse Chope, Miss C. E. Larter, Mr. C. H. Laycock, Rev. G. D. Melhuish, Rev. O. J. Reichel, and Mrs. Rose-Troup be a Committee for the purpose of noting and recording the existing use of any Verbal Provincialisms in Devonshire, in either written or spoken language; and that Mr. C. H. Laycock and the Rev. O. J. Reichel be the Secretaries.

That Rev. S. Baring-Gould, Mr. R. Burnard, Rev. J. F. Chanter, and Mr. R. Hansford Worth be a Committee to collect and record facts relating to Barrows in Devonshire, and to take steps, where possible, for their investigation; and that Mr. R. Hansford Worth be the Secretary.

That Mr. J. S. Amery, Mr. A. H. Dymond, and Major R. C. Tucker be a Committee for the purpose of making arrangements for an Association Dinner or any other form of evening entertainment as they may think best in consultation with the local Committee; and that Major R. C. Tucker be the Secretary.

That Mr. J. S. Amery, Sir Alfred W. Croft, and Mr. R. Hansford Worth be a Committee to collect and tabulate trustworthy and

comparable observations on the Climate of Devon ; and that Mr. R. Hansford Worth be the Secretary.

That Sir Roper Lethbridge, Mr. R. Pearse Chope, Mr. T. Cann Hughes, and Mr. E. Windeatt be a Committee for the purpose of investigating and reporting on any Manuscripts, records, or Ancient Documents existing in, or relating to, Devon, with the nature of their contents, their locality, and whether in public or private hands ; and that Mr. E. Windeatt be the Secretary.

That Mr. J. S. Amery, Mr. R. Burnard, Rev. S. Baring-Gould, Mr. J. D. Pode, and Mr. R. Hansford Worth be a Committee for the purpose of exploring Dartmoor and the Camps in Devon ; and that the Rev. S. Baring-Gould be the Secretary.

That Mr. Maxwell Adams, Mr. J. S. Amery, Rev. J. F. Chanter, Rev. Professor Chapman, Mr. R. Pearse Chope, Sir Alfred W. Croft, Mr. W. A. Francken, Mr. C. H. Laycock, Rev. O. J. Reichel, Mrs. Rose-Troup, and Col. Arthur B. Prowse be a Committee, with power to add to their numbers, for compiling complete Indexes to the First and Second Series of the Transactions ; and that the Rev. J. F. Chanter be the Secretary.

That Mr. Maxwell Adams, Mr. J. S. Amery, Mr. T. Cann Hughes, Miss B. Cresswell, Sir Roper Lethbridge, Rev. O. J. Reichel, Mr. A. J. V. Radford, Mr. A. L. Radford, Mr. Harbottle Reed, Major George E. Windeatt, and Rev. J. F. Chanter be a Committee, with power to add to their number, to prepare a detailed account of the Church Plate of the County of Devon ; and that Mr. Harbottle Reed and the Rev. J. F. Chanter be the joint Secretaries.

That Miss Rose E. Carr-Smith, the Hon. Mrs. Colborne, Miss Chichester, Mr. G. T. Harris, Mr. W. P. Hiern, Miss C. E. Larter, Mr. C. H. Laycock, Mr. H. G. Peacock, Miss C. Peck, Col. A. B. Prowse, and Mr. A. Sharland be a Committee, with power to add to their number, for the purpose of investigating matters connected with the Flora and Botany of Devonshire ; and that Mr. W. P. Hiern be the Secretary.

That Mr. Maxwell Adams, Mr. J. S. Amery, Rev. S. Baring-Gould, Mr. Robert Burnard, Rev. J. F. Chanter, Mr. W. E. P. Chapple, Mr. R. Pearse Chope, Mr. A. W. Clayden, Miss B. F. Cresswell, Mr. G. M. Doe, Mr. M. T. Foster, Mr. T. V. Hodgson, Sir Roper Lethbridge, Rev. S. M. Nourse, Mr. H. Lloyd Parry, Col. A. B. Prowse, Mr. A. L. Radford, Lady Radford, Mr. Harbottle Reed, Mr. F. R. Rowley, Mr. H. Tapley-Soper, Mr. H. R. Watkin, Mr. E. Windeatt, Mr. G. D. Woolcombe, and Mr. R. Hansford Worth be a Committee for preparing a list of "Ancient Monuments" in the county of Devon, which it is considered desirable should be handed over, with the consent of their owners, to the custody of the First Commissioner of Works, under the provisions of the Acts of 1882, 1900, and

1913, with the view to their preservation and protection ; and that Mr. Maxwell Adams be the Secretary.

That the Rev. J. A. Balleine, Rev. J. F. Chanter, Mr. R. Pearse Chope, Mr. C. H. Laycock, Sir Roper Lethbridge, Col. Arthur B. Prowse, Rev. O. J. Reichel, and Mrs. Rose-Troup be a Committee for the purpose of collecting and recording information concerning Place-Names and Field-Names in Devonshire ; and that Col. Arthur B. Prowse be the Secretary.

That Mr. Maxwell Adams, Mr. R. Pearse Chope, Miss B. F. Cresswell, Mr. C. H. Laycock, Mr. R. Burnet Morris, Lady Radford, and Mr. H. Tapley-Soper be a Committee for the compilation of a Bibliography of the County of Devon ; and that Mr. R. Burnet Morris be the Secretary.

PROCEEDINGS AT THE FIFTY-FIFTH ANNUAL MEETING, HELD AT PLYMOUTH, 18TH TO 21ST JULY, 1916.

AFTER an interval of twenty-four years the Association again held its Annual Meeting in 1916 at Plymouth, and, favoured by brilliant weather, a large attendance of members gathered in our great naval port.

At 2 p.m. on the 18th July a meeting of the Council was held in the Athenæum, and on its conclusion the members of the Association assembled in the Council Chamber, where they received a civic welcome from the Mayor (Alderman T. Baker, J.P.).

His Worship said that " Mr. Hansford Worth had told him the kind of reception which would not be acceptable to the Association that day, and he ventured to think that their views were quite correct, having regard to the times in which they lived. If these were times of peace it would have been a great pleasure to him to have extended to them that hospitality which was so helpful in ordinary days, but living, as they were, in very serious and anxious times, such a reception would have been out of keeping and out of tune.

" I think you have acted wisely in not abandoning your meeting this year, because you can now pursue the work of usefulness, to perform which you were inaugurated, work which for many years you have carried on with so much success and such advantage to the county and the country as a whole.

" He was given to understand that that was their fifty-fifth annual meeting, so that they had stood the test of many years. He did not wish to claim too much for Plymouth, but he was quite sure they would like him to claim all that to which the town was entitled. He understood that it was at a meeting of two or three kindred spirits on the Hoe that the foundations of the Association were laid. The first meeting was held in 1862, and the first annual meeting took place in Plymouth in the following

year, when their President was Dr. Spence Bate, a well-known gentleman, who was held in the highest esteem. He had not the slightest doubt that those who were brought into contact with Dr. Bate realised the value of his good judgment in all things.

"The Association had had many distinguished gentlemen as Presidents. On their next visit to the Three Towns (Devonport), in 1870, they were fortunate in having at their head Mr. J. A. Froude, the famous historian. They again selected the borough for their meetings in 1892, when Mr. A. H. A. Hamilton occupied the presidential chair. They had many other Presidents who were not Plymothians, among them Dr. Temple, Lord Coleridge, and Charles Kingsley. He hoped the line of good and illustrious men would continue for many years to come. In the matter of research the Association had done a great and useful work. In the preservation of Dartmoor they had performed good service. The statistics they had gathered from time to time about the climatic conditions of Devon had provided an answer to the aspersions of ill-informed persons. He hoped the Association would continue that good work, because the truth had to be told and retold, and they did not want Devon to be under any cloud with regard to its climatic conditions. He hoped the stay of the members in Plymouth would be profitable and pleasant."

On behalf of the Association, Mr. E. Windeatt "acknowledged Alderman Baker's warm reception. They recognised the kindly spirit in which they had been welcomed, and the truth of what had been said respecting the times in which they lived and the need for not doing what in other circumstances they would have done. They were glad to find Alderman Baker occupying the civic chair. He was not only the Mayor of Greater Plymouth, but had previously served as chief magistrate of the lesser town. It was apparent that his work for the community in the latter capacity had resulted in his filling his present distinguished office.

"The Devonshire Association, he was glad to say, was continuing its work. He thought it would have been a great mistake if that work had stopped. Moreover, he knew of no other place which they could at this time more fittingly have chosen for their meeting, and he thanked the Mayor for the cordial invitation extended to them. The Director of the Marine Biological Laboratory was their

new President, in addition to which their presence in the borough, with all its historic associations, would recall to their minds with pride the part she had played in the past and the part she would play in the history of the future."

Before the members dispersed they were shown the staff of office of H.R.H. the Prince of Wales as Lord High Steward of the Borough.

A General Meeting of the members was held at 3.30 p.m. in the Athenæum with Colonel Clifford in the chair, at which, among other matters, it was decided to hold the Annual Meeting in 1917 at Barnstaple, the capital of North Devon.

A visit was afterwards made to places of interest in Old Plymouth, under the guidance of Mr. R. Hansford Worth. The party left the Athenæum at 4 p.m., and the Church of St. Andrew—the mother church of Plymouth—was first visited. Here, by the courtesy of the Vicar, the Church Plate and the Registers were on view, and Mr. Hansford Worth gave a description of the structure and its history. Quoting from Rowe's *Ecclesiastical History of Plymouth* he said :—

"The earliest reference we have to anything pertaining to the fabric of St. Andrew is in 1385, when it is stated that a south aisle was added to the church (it was licensed in this year and stated to be *noviter constructa*). Nothing of this presumably remains ; but in 1440 we find an altar of the Blessed Virgin (to whom the new aisle had been dedicated) still in the church, and the following year the north aisle is said to have been built, and dedicated to St. John the Baptist. In 1488 we have accounts of moneys given towards the south aisle of the church, and reference is also made to St. John's aisle, and the aisle of Corpus Christi. Between 1440 and 1460 the north chapel, and the tower, were built, and we may conclude that by 1490 the building, much as we have it now, was completed."

R. N. Worth, in his *History of Plymouth*, states that—

"It is recorded that Thomas Yogge built the tower, the town, to use Leland's words, 'finding the stuff,' also adding, again to quote Leland, a 'fair chapel' on the north side of the church, no doubt the north transept.

"Yogge is the name we find now as Young. There was a John Yogge, put out of the freedom as a 'foreyn' in 1474 ; but the Mayor of that surname was called William,

and the tower builder Thomas, and that the town continued on good terms with him is clear. Gew, the Receiver in 1495, rode to Ayspton (Ashburton) to see him when he was sick, and 8d. was spent 'when he came fro London at seynt Tomas ys day yn the tounne ys name yn wyne' the same year." (Thomas would appear to have belonged to the Ashburton branch of the Yonge family.)

It seems probable that a certain John Jabyen who died in 1441, and was buried near the altar of St. John the Baptist in the north aisle, was the builder of this aisle. There was a chantry known as Jabyens, worth some £7 a year, for the maintenance of a chaplain to say Mass daily at the altar of St. John the Baptist for the soul of John Jabyen.

As the years passed the need for further sittings in the church was met by the erection of galleries.

In 1594 the whole of the sittings were on the floor of the church, but in that year a gallery was put up apparently at the western end of the church.

In 1639 the gallery in the north aisle was built, and in 1718 another was erected in the south aisle for the use of the charity children. There is no doubt that up to the first quarter of the 19th century there were three large galleries. "The church was a forest; pews here, pews there, pews everywhere."

In 1824 the church was most drastically restored, the result of which was to almost eliminate every trace of interest and antiquity in the church. Doorways, stairs to rood-loft and tower arch were blocked up, the parvise chamber over the south porch was pulled down, the screen and loft destroyed, sepulchral effigies were buried, the crypt was turned into a chancel house, and the building was left nothing but a shadow of its former noble self.

In 1875 the church was restored by Sir Gilbert Scott, and brought back, as far as possible, to its original state.

The late R. N. Worth writes: "St. Andrew's Church, as it stands, is the chief link with antiquity which Plymouth possesses. It is the building in which Katherine of Aragon returned thanks for her safe voyages; wherein the Elizabethan heroes worshipped; whence the congregation swarmed to the shore to welcome Drake; where the Puritans of the Commonwealth took the Solemn League and Covenant, and vowed to defend the town to the last; where the Second Charles touched for evil; which supplied

the last resting place for portions of the bodies of Frobisher and Blake; and where Johnson critically sat to hear the sermon Mudge preached for his special delectation."

Leaving St. Andrew's the party moved to the *Prysten House* adjoining, a building commonly known as "The Abbey." By the kindness of Messrs. Brown, Wills, and Nicholson this was open for inspection. The building is of shallow depth, and, in consequence, of much less size than a mere inspection of its frontage would indicate. Though called "The Abbey," it is not an abbey or monastic house at all, but the old "prysten" or clergy-house of the town.

From the Prysten House the course taken lay through *St. Andrew's Street*, where was seen the finest remaining specimen of the earlier domestic architecture of the town, a house with corbelled front and ample window space, last occupied as a first-class residence by the Skardon family, but now and for many years sub-let in tenements. Until but a short time ago this house had neighbours of a similar type, all now destroyed.

In Southside Street, by permission of Messrs. Coates & Co. the refectory of the old *Black Friars' Monastery* was examined within and without, and Mr. Hansford Worth read some notes on the Religious Houses of Plymouth.

On the *Barbican* the old town house of the Baylys was viewed. This is now a ship chandler's shop and store, and in *New Street* there are two old houses with corbelled fronts, excellent types of a class of building formerly much more prevalent in the town, now almost lost. One of these two houses is itself abandoned to decay.

The *West Pier* of Sutton Harbour was visited, the *Mayflower Stone* inspected, and Mr. Hansford Worth gave a brief description of the former fortified entrance to the Pool and the evidences on which the location of the Mayflower stone was settled.

In Lambhay Street was seen the one surviving remnant of the *Castle of Plymouth*, a gate-house formerly attached to the south-eastern gate. It was built on the rocky spur at the eastern end of the Hoe, immediately overlooking and commanding the entrance to Sutton Pool, some time in the reign of Henry IV.

In the evening at 9 p.m. the members met in the Lecture Room, Borough Museum, Tavistock Road, to hear the Address of the incoming President, Dr. E. J. Allen, F.R.S.

Colonel Clifford, v.d., who, in the absence of the retiring President was invited to take the Chair, referred to the War work which the London Devonian Association was doing in connection with the "Conference of English County Societies," of which he was chairman. It was realised that there were in London a large number of wounded soldiers and sailors from various English towns who could not regularly be visited by their kith and kin, and there was formed for each County Society a committee of ladies, numbering from ten to fifty, for the purpose of visiting and interesting themselves in those men. The scheme had succeeded admirably. The London Devonian Association was actively engaged, and he knew their work would commend itself to everyone.

In introducing Dr. Allen, Colonel Clifford said :—

"I much regret, indeed I am sure we all regret, that Principal Clayden, our late President, is not here to-night to induct our new President. However, I would like to bring to your recollection the very excellent address he gave us last year, which was devoted to the 'future of higher education.' He dealt first with the broader issues; his definition of education—its functions; its advantages to the individual and the nation which makes for efficiency; how education had advantaged Germany, and why education should not be held responsible for her ignoble deeds in Belgium, France, and elsewhere, an opinion with which I am sure we are all in accord, and I will make no apology for saying that in my opinion Germany, with all her advantages, educational and otherwise, is a failure, simply because she is a nation without a free press, and without a free Government. She is a nation debauched by docility.

"Principal Clayden then went on to point out that in his opinion there should be a university college at Plymouth, where we are now assembled, devoting itself primarily to engineering, applied physics, and marine studies. While hoping that our ex-President's views may be ultimately realised, I may remind you that Plymouth has a most excellent and interesting Marine Biological Station, an institution of world-wide repute, whose eminent Director, Dr. Allen, has been invited and has consented to be our President for the ensuing year. Our new President's address will no doubt be devoted to those realms of thought and action in which he is such an

eminent specialist. No doubt he will give point to his address by calling up from the 'vasty deep' and throwing upon the screen all sorts of weird subjects upon which he will dilate for our instruction and benefit.

"I will not interpose any further between the promise and its performance, so on behalf of the Association I invite Dr. Allen to take this chair and become our President for the ensuing year."

The President then delivered his Address (see page 55), on the conclusion of which, on the motion of Mr. Maxwell Adams, a vote of thanks to Dr. Allen was carried by acclamation.

On Wednesday, 19th July, the reading of the Reports and Papers in the Athenæum was commenced at 10 a.m. and continued until 2 p.m.

After lunch the members proceeded to Plympton by rail, thence driving to Plympton Castle, where they were received by the Rev. H. D. Hole, rector of Plympton St. Maurice; the Rev. P. G. Chamberlain, Dr. Aldridge, Messrs. W. J. Woollcombe, C. H. Moreton, R. H. Andrews, T. Courtis, J. D. Folley, F. H. E. Crews, and A. Folley, Mrs. Brooking-Rowe, and Miss Wilks.

Extending a warm welcome to the visitors, the Rev. H. D. Hole recalled the very pleasant week's visit the Association paid to the parish twenty-nine years ago. They had come to a parish where the life and soul of their Association for many years still lived in their memories. He referred to the late Mr. Brooking-Rowe, whose reverence for antiquity was something never to be forgotten, and who had immortalised the parish with his wonderful history in which he took his readers back a thousand years.

Mr. W. J. Woollcombe referred to a possession of Plympton which was at once their shame and their glory—a portrait of Sir Joshua Reynolds, painted by himself to commemorate his term of office as Mayor of what was then a borough. Plympton's shame was that they sold the picture, and their glory the possession of an excellent copy painted by a lady. That copy now hung in the Guildhall.

Dr. Allen having suitably acknowledged the welcome, Mr. H. Michell Whitley then took the members around the remains of the Castle, explaining the various points of interest in its architecture and history.

He described the Norman Shell Keep, a fragment of

which only remains crowning a high mound formerly encircled by a moat filled with water in the time of war. Below this was the inner bailey, roughly rectangular in shape, about 350 feet long and 250 feet wide, surrounded by a deep ditch and mound, the latter crowned originally by a timber palisade which formed a very efficient defence, and within which the domestic buildings were situated. There are slight traces of an outer bailey to the west.

The masonry Castle was probably built by Richard Fitz Baldwin, Sheriff of Devon 1129, to whom Henry 1st gave the Honour of Plympton; the defences lasted but a short time, as they were "slighted" and rendered of no military value in the reign of Stephen as its owner had revolted.

It is doubtful if the keep was ever rebuilt, although the domestic buildings in the bailey continued to be used for several centuries.

In 1250 tenants of fees had to maintain the walls of the castle (a "kernell"—battlement—for every fee)—the lord the moat and tower (keep) at his own cost.

In 1484 Sir Thos. Maleveran, Knight, was granted a mansion in Plympton Castle. Leland, writing in the 16th century, describes it as "a fair large Castelle and Dungeon in it whereof the walles yet stonde but the Logginges within be decayed."

Leaving the Castle the party drove to Newnham Park, where the members were entertained at tea by Major and Mrs. Strode. Major Strode, owing to indisposition, was unfortunately unable to himself welcome other than the official representatives of the Association.

The Strodes of Newnham were formerly seated at Strode in Ermington, certainly as early as the reign of Henry III. They acquired Newnham, in the time of Henry IV, by marriage with a coheirress of the Newnhams.

The three best known members of the family have been—Richard Strode, who was imprisoned at Lydford as an offender against the Stannary Laws, in the reign of Henry VIII. He was member of Parliament for Plympton, and the sentence against him was annulled by Act of Parliament, on the assumption that he was prosecuted for preventing the tinnerns from injuring creeks and harbours; William Strode, also member for Plympton, and who was one of the celebrated five members; and Dr. William Strode, poet and divine, who died in 1644.

Newnham Park, the present seat, was built in or about 1690. The house looks at first sight relatively modern, but inspection reveals that it stands on foundations of earlier date than 1690. The present basement was formerly the ground floor of a Tudor house. It has been converted into a basement by a terrace which has been thrown up round the house, and this interpretation of its architecture is borne out by the fact that excavations near the house have revealed the paving of the former courts beneath the terraced ground and level with the floor of the basement.

Old Newnham, now a farm-house, has, on the other hand, retained most of its original features. At the kind invitation of Mrs. and Mr. Coaker, the tenants, the Association visited this interesting house also. Major Strode informs us that no manor of Newnham can be traced, although both family and fine old building bore that name, but that old Newnham lies in the manors of Cartsford and Torridge, while Newnham Park may represent the old manor house of Loughtor.

Old Newnham is a Tudor house; the structure is of two, not widely separated, dates. First there is the original building, comparatively small, but beautiful and very perfect, with its hall and great kitchen. The hall has now been parted by a floor into lower and upper rooms, but little damage has been done externally beyond the disturbance of a few mullions of the great window, and the partial blocking of the oriel. To this original house has been added a wing on the left hand, in slightly varied but quite consistent style; a feature of this addition is the unusual but highly effective treatment of the chimneys.

But for the manner of junction of the wing and the main building, which clearly marks the former as an addition, it would be difficult to say which was the earlier in date. There is, however, one feature which would confirm the main building as the older, and that is the occasional use of Roborough Down elvan in the dressings, a material which is absent from the wing.

Cordial thanks were given to Major and Mrs. Strode, who was a most assiduous hostess, for their hospitality, and to Mrs. and Mr. Coaker for their kindness in affording the members every facility for a thorough inspection of Old Newnham.

Those members of the party at Plympton who were unable to avail themselves of Major and Mrs. Strode's

invitation to Newnham Park proceeded to the Church of Plympton St. Maurice, where the architectural features were explained by the Rector, the Rev. H. D. Hole.

At 9 p.m., at the Lecture Hall of the Plymouth Borough Museum, a new feature was introduced into the proceedings of the Association in the form of an exhibition of lantern slides of places and objects of interest in or connected with the locality, with especial reference to old Plymouth buildings now destroyed.

The slides were lent by Mr. R. Rugg Monk, Mr. H. M. Evans, Mr. C. W. Bracken, and Mr. R. Hansford Worth, and a brief description of each was given by the last named.

Roman antiquities from the southern shores of the Cattewater, and prehistoric remains on the nearer slopes of Dartmoor formed an introduction. The remnants of the old monastic houses of Plymouth, as far as photographs of these have been preserved; old houses, including those still standing, and others recently destroyed; the old Grammar School and Hospital of the Poor's Portion, both removed when the present Guildhall was built; maps and copies of old engravings, with photographs of some of the streets as they stood less than thirty years ago, all helped to reconstruct for the audience the ancient town, much of which has yielded to necessary improvement, but of which much might have been preserved had there existed any general sympathy with the material links to the past life of an historic community, now left singularly destitute in that respect, and not yet alive to any clear sense of their value.

The Association is indebted to Mr. T. V. Hodgson, who kindly and most efficiently manipulated the lantern and the exhibition of the slides.

On Thursday, the 20th of July, the reading of the papers was resumed at 10 a.m. in the Athenæum, and was followed by a General Meeting of members, at which the following Resolutions were moved from the Chair and carried by acclamation:—

(a) "That the best thanks of the Association be given to the Municipal Authorities and to the Members of the Plymouth Institution for the use of the rooms they so kindly placed at the disposal of the Association for this meeting."

(b) "That the best thanks of the Association be given to

the Local Secretary, Mr. R. Hansford Worth, for his efficient services on this occasion."

In reply Mr. Hansford Worth acknowledged the assistance he had received from Mr. Peter Bond, who had superintended the transport arrangements, and Mr. T. V. Hodgson, who had presided at the lantern at the exhibition of slides.

This being "Armada Day," among those attending the meeting were some members of the London Devonian Association, who desired to mark the occasion by paying a tribute to the memory of Drake, to whom Devonians all over the world unite in paying homage. Accordingly, through the initiative of Colonel E. T. Clifford, chairman of the London Devonians, it was arranged to lay a wreath at the foot of the Drake Statue, on the Hoe, and the ceremony—brief and simple, but none the less impressive—took place in the afternoon. The wreath was a magnificent one, and contained some exceptionally fine red and white roses. But its most significant feature was the presence of "immortelles"—flowers which will remain when the roses have faded and gone. Accompanying the wreath was a printed card, bearing the words:—

"To the glory of God, in honour of the British Navy, and to the immortal memory of Drake, England's great warrior-navigator, whose deeds preserved this empire in the hour of peril, and whose teaching will save us to-day.

"A tribute from the London Devonian Association."

The wreath having been placed on the steps of the statue by Mrs. Clifford, Colonel Clifford delivered a short speech in praise of Drake. He said though they were unable to commemorate Armada Day, as originally intended, the members of the London Devonian Association who were attending the meetings of the Devonshire Association desired to express their thanks to the civic authorities for granting permission to lay that wreath at the foot of Drake's statue. Devonian societies all over the world were united in celebrating Armada Day—and celebrating it as Devon's Day—recognising as they did the transcendent importance of the great fight which took place over 300 years ago across the blue sea which they saw before them that day. Devonians throughout the world, exiles from their native country, had adopted Drake as their hero, not only for the great part he took in the Armada, but because

of the enormous advantages to us that had flowed from his actions and teaching. From the great war now being waged we should emerge triumphant, largely because our navy had generously adopted Drake's principles of naval warfare and because the spirit of Drake still animated the people of this empire. Such was the significance of Drake's drum. Confidence, resolution, bravery, and patriotism were Drake's characteristics; let us follow so great an exemplar.

By the invitation of Dr. Allen a visit was afterwards paid to the Marine Biological Laboratory, where all were greatly interested in the many curious denizens of the deep that are there on view. Dr. Allen and members of his staff explained the specimens to the visitors, who were afterwards the guests of the President at tea, served in the laboratory garden.

The day's proceedings were brought to a conclusion with an enjoyable *Conversazione* in the Athenæum, the members of the Plymouth Institution acting as hosts. Dr. Allen was present in a dual capacity—as President of the Association and President of the Institution. In the latter rôle he welcomed the guests, remarking that it was at the Athenæum that the Devonshire Association was started, and the members of the Plymouth Institution were glad to see it back in its first home. He hoped the members of the Association would leave Plymouth not only with increased knowledge, but with the most pleasant memories.

Mr. C. W. Bracken, one of the hon. secretaries of the Institution, had arranged a varied programme, eminently appropriate to the occasion. An orchestra consisting of Miss Gladys Trant (piano), Miss Ethel Allen (violin), and Miss Winifred Blight ('cello), provided a musical programme, and refreshments were handed round. A fine collection of exhibits were inspected, the well-known collection of china being much admired. The private exhibits included photo-micro transparencies, showing plant structure, sections of stems and leaves, the life-history of *ranunculus acris*; crystals in plants shown by colour slides (exhibited by Mr. J. Davy Turney); ferns from the Athenæum collection; photographs and diagrams of prehistoric remains at Carnac (shown by Mr. Preston Pearce); specimen of *cotula anthemoides*, a composite plant, new to England, found in the Great Western Docks, Plymouth (shown by Mr. W. H. Smith); cases of Devon

orthoptera, in illustration of the lecture given to the Association on Wednesday, with larvæ of bramble grasshoppers (shown by Mr. C. W. Bracken); implements and ornaments of the Bronze Age and Dartmoor prehistoric remains, late Neolithic and early Bronze Age, from the Borough Museum (shown by Mr. T. V. Hodgson, curator); books, MSS., &c., lent by the Free Library Committee, including Plymouth's earliest newspaper, *The Weekly Journal*, 1721; "Cothele," by Nicholas Condry; original letters and drawings of Benjamin Robert Haydon, historical painter, born in Plymouth, 1786; two cases containing parchments with seals attached; broadsheets, and the following original manuscripts: Baring-Gould's "Songs and Ballads of the West" and "Folk-songs of the West"; armorial designs made by Sir John Skelton, when Governor of Plymouth Citadel, 1670, added to by John Hollier, 1729; and Eden Phillpott's MS. of "Widcombe Fair."

On Friday, the 21st July, the members joined with the Plymouth Institution in an excursion to Boringdon, Wotter Clay Works and Sheepstor. The original programme included also certain antiquities on Ringmoor Down and a visit to Meavy, but the extreme heat rendered it desirable to spare the horses by omitting these portions of the excursion.

Mr. A. Gillard, the tenant of Boringdon, not only threw open the house to the inspection of the Association, but also himself very kindly conducted the members through the same.

In a paper on the history of Boringdon House, Mr. R. Hansford Worth went back to the tenth century, when, according to Oliver's "Monasticon," King Edgar (957-975) granted to St. Peter of Plimton, Wembury and Boringdon. One Richard Mayhow purchased the manor of Boringdon—possibly from the Crown. In 1581-2 Edmund Parker and John Parker his son appeared to have been tenants of Boringdon. The manors of Boringdon and Woodford passed to the Parkers by the marriage of John Parker and Frances, daughter and heir of Jerome Mayhow. The manors were settled by a marriage settlement of 25th April, 24 Elizabeth, 1582, Edmund Parker, the father of John, carrying into settlement £3,000. At Boringdon, and subsequently at Saltram, the Parkers, originally a North Molton family, had been settled ever since. Raised

to the peerage in 1774 as Barons Boringdon, they were advanced in 1815 to Viscounts Boringdon and Earls of Morley.

The house as it stands is obviously reduced by a considerable demolition of its eastern part. It would appear to have been built neither by the Mayhows nor by the Parkers, but to be essentially and with none but minor alteration the original grange of the Priors. Additions of Stuart date can be traced, notably a parapet on the main front, which bears shields with the arms of Mayhow and Parker respectively, and the detail of the chief entrance door veneered over earlier work. There are also doorways within the house, the granite dressings of which are of Jacobean character. The fireplace in the hall is dated Charles II, and carries the arms of Parker only. Certain chimneys and gables are parts of the same evident attempt to modify with more decorative work the earlier and severer architecture. It is to be noted that Roborough Down stone was freely used in the original building, but does not appear in any of the additions.

After a thorough inspection of Boringdon House the road was taken to Wotter Clay Works in Shaugh parish, which were thrown open to the Association by the kindness of the Dartmoor China Clay Company.

Here the first care of the members was to dispose of their picnic luncheons. Mr. Sellick had thoughtfully provided a shelter, the shade of which was gratefully appreciated, and he and Miss Sellick also provided an ample supply of tea, which added to the enjoyment of the meal.

After lunch the party were conducted over the works and shown the whole process of winning china clay and preparing it for the market. The decomposed granite contains, in addition to the clay derived from the alteration of its felspar, the whole of its other original minerals. To separate these, which are waste, from the valuable clay the soft rock is broken down and thoroughly beaten up by the force of a stream of water issuing under considerable pressure from a hose. As the stream flows away from the working face the sand soon settles, within the clay pit itself, and is thence removed in tram waggons up an incline and tipped to waste. The clay with the finer sand and most of the mica continues in suspension in the water, and is conducted to a series of shallow channels, through which it flows with a velocity of about 30 feet a

minute. This rate of flow suffices to keep the clay in suspension, but permits the sand, mica and some of the coarser clay particles to settle in the channels, from which the deposit is from time to time removed, and is rewashed with additional water and again allowed to partly settle in other channels, a product being obtained which is of second quality.

From the first set of channels, or mica drags, the finer clay is carried by the water (the fluid containing about 3 per cent of clay) to large settling pits, in the quiet depths of which the clay precipitates, and in which there is left a mixture containing about 50 per cent of clay by weight. This mixture is trammed on to and spread over a tiled floor, heated by flues which pass under it from end to end, the depth so spread upon the floor being about ten inches. Here the surplus water is boiled off, and marketable clay produced which contains from 12 to 13 per cent of uncombined moisture. Of the total amount of china clay produced in Devon and Cornwall not more than about one-seventh is used in the manufacture of pottery, the remainder being utilised in bleaching and filling textile fabrics, in paper making, and in very numerous other and less obvious processes.

From Wotter, the Ringmoor walk being abandoned, the members drove direct to the moorland village of Sheepstor. Here the Rev. H. H. Breton welcomed the party to the church, a feature of which is the fine wood screen, recently erected, and incorporating portions of the original screen, wrecked and destroyed in an ill-considered restoration of many years ago, but of which sufficient fragments were rescued to guide the reconstruction. An Elizabethan chalice also proved of great interest to some of the members.

The old priest's house was also seen, an interesting little building, retaining many of its original features.

The Elfordes of Longstone were formerly the leading family of the parish, and two of their monuments yet remain in the church. Longstone is now a ruin, its destruction having been consequent upon the formation of the Burrator Reservoir of the Plymouth Corporation.

Sheepstor, until the middle of last century a chapelry attached to and served from Bickleigh, was entitled to but one service in every three weeks, and claims to be the scene of the well-known pulpit and goose incident. The clerk having taken advantage of the interval between two

services, and possibly hoping for some delay in the date of the next, set his goose in the pulpit ; the day of the next service came round and found the goose still sitting, the eggs unhatched. Wherefore the Vicar of Bickleigh had to be entreated not to enter the pulpit lest the sitting tenant be disturbed.

With Sheepstor the business of the excursion terminated. There remained but to take tea at Yelverton and to drive back to Plymouth in the cool of the evening, thus bringing to a close a very successful and enjoyable meeting.

The thanks of the members for its success are due to the excellent arrangements made for them by the Hon. Local Secretary, Mr. R. Hansford Worth, and to Mr. Peter Bond, who superintended the transport.

Obituary Notices.

SIR THOMAS BENJAMIN BOWRING. Sir T. B. Bowring, the son of Edward and Emma Bowring, was born in Newfoundland in 1848, and lived in New York for many years as representative of a well-known shipping company of Liverpool and London, of which he subsequently became the head, and in 1891 came to reside in London and Devon. His residence in Devon was at Pitt House, Moretonhampstead, in which town he built, furnished with books, and handed over to the Parish Council, free of all cost, the Moretonhampstead Free Library. He built a number of workmen's cottages in the parish, and every year in connection with the local Horticultural Society offered prizes for the best tilled gardens and allotments. He also contributed handsomely to the support of the Unitarian Chapel at Moretonhampstead.

He became a life member of the Devonshire Association in 1890. He was knighted in 1914, and had been a County Magistrate since 1906.

He died on the 18th October, 1915, and was buried at Moretonhampstead.

THE RT. HON. LORD CLIFFORD. Lewis Henry Hugh Clifford, who died on the 19th July, 1916, was the ninth holder of the barony of Clifford of Chudleigh in the peerage of England. It was created in 1672, in favour of the celebrated Caroline convert, Sir Thomas Clifford, the "C" of the "Cabal" coalition, who resigned the Lord High Treasurership of England on the passing of the Test Act to the exclusion of Catholics. There is a tradition that his friend, John Dryden, wrote part of *The Hind and Panther* in Ugbrooke Park. The late baron was the eldest son of the eighth holder of the title, his mother being Agnes Catherine, daughter of the eleventh Baron Petre. Born on August 24th, 1851, he was educated at Stonyhurst College, took his B.A. degree in London University in 1872, and in 1882 was called to the Bar at the Middle

Temple. In 1890 he married Mabel Ann, youngest of the four daughters and co-heiresses of John Towneley, of Towneley. By his marriage he became allied to a family which had been settled in Lancashire for more than a thousand years, and many members of which were men of mark. One formed the famous Towneley collection of ancient coins and statuary, which the British Government secured for £28,000. Another distinguished himself by translating *Hudibras* into French. A third, Francis Towneley, was so devout a Roman Catholic that rather than forswear his faith he went to the scaffold, and his head was impaled on the old Temple Bar that formerly stood where the High Courts of Justice now stand. It was a Towneley who in 1861 won the Derby with Kettledrum.

Lord Clifford from his earliest years recognized the duties his position imposed on him. He possessed considerable versatility. A keen sportsman, a good shot, and one of the best amateur actors in Society, he gave a large share of his life to public work. As a magistrate and deputy-lieutenant of Devon and a chairman of Quarter Sessions, he administered justice impartially with a decided leaning towards mercy. He further served his county as an alderman, and did excellent work as chairman of its Education Committee until failing health in 1913 compelled him to relinquish the office.

But, perhaps, the greatest service he rendered to his country was in connection with the Volunteer and Territorial Forces, for which he won his V.D. In the promotion of their interest he spared neither time, effort, nor money. He was lieutenant-colonel commanding the old 5th Devon Volunteer Infantry Regiment from 1881 to 1901, and honorary colonel of the battalion from 1903 to 1908, with the temporary rank of colonel in the army (1906). He commanded the Devon Volunteer Infantry Brigade from 1901 to 1908, and the Devon and Cornwall Infantry Brigade from 1908 to 1911, and was A.D.C. to King Edward VII for Volunteers from 1901 to 1910. When the Devon Territorial Force Association was formed in 1908 he became its vice-chairman, and had held the office ever since. When the war broke out he did not a little to promote recruiting.

Like many of his ancestors he was a count of the Holy Roman Empire. He was also a member of the Catholic Education Council, vice-president of the Plymouth

Voluntary Schools Association, and chairman of the Hospital of St. John and St. Elizabeth, London. To him was largely due the re-establishment, after a lapse of several centuries, of Buckfast Abbey on its ancient site on the banks of the river Dart, and in recognition of his devotion and labours there have been added, according to old precedent, to the arms of the restored foundation the arms of the house of Clifford.

At his beautiful seat, Ugbrooke Park, he dispensed lavish hospitality, and among his many guests he had the honour of entertaining King George and Queen Mary and several of the leading musicians of the day, including Navidar Nachez, the celebrated violinist.

It should be noted that when Lord Clifford was called to the Bar, the old controversy as to the right of a peer of the realm to practise as a barrister was revived. Lord Chief Justice Coleridge ruled that as a peer was a member of the highest Court of Appeal it would be improper for him to appear as an advocate. Singularly enough the same question subsequently arose in the case of Lord Coleridge's own son when he succeeded to the title, when the Lord Chief Justice's ruling was reversed.

Lord Clifford became a life member of the Association in 1881, and held office as President in 1900, when that body met at Totnes.

Lord Clifford left no children, and the title falls to his brother, the Hon. William Hugh Clifford, who was born in 1858, married in 1886 Catherine Mary, daughter of Mr. H. Bassett, and has a son, Charles Oswald Hugh Clifford.

HENRY C. A. CONYBEARE. Henry Conybeare, of Platway, Shaldon, Lord of the Manor of Bondleigh, North Tawton, and a Justice of the Peace for the County of Devon, was the son of Mr. Henry Conybeare, a distinguished engineer (whose services were recorded in the yearly edition of *Men of the Time* from 1871 to 1892), and grandson of Dr. W. D. Conybeare, Dean of Llandaff, an eminent geologist.

Mr. Conybeare was born in January, 1853, and was educated at Westminster School, proceeding afterwards to Merton College, Oxford, where he graduated as Master of Arts, and entered the Indian Civil Service in November, 1873, from which he retired in 1908, after 35 years' service.

He married, in 1889, the third daughter of the Honble. Maynard Broadhurst, a Puisne Judge of the North-West Provinces of India, by whom he had three daughters and four sons, the two eldest of whom lost their lives in the service of their King and country in the Great European War.

Mr. Conybeare became a member of the Devonshire Association in 1910, and died 10th March, 1916.

ARTHUR FISHER. Arthur Fisher, who died at Tiverton on the 15th July, 1916, at the age of 56, became a member of the Association in 1903. He was the youngest son of Stephen Fisher, confidential manager to the late Sir John Amory and Messrs. Heathcoat & Co., was educated at Blundell's School, and was articled as a solicitor to Mr. F. S. Dayman, with whom in due course he became a partner, until Mr. Dayman's retirement, after which he remained in practice alone. An able lawyer, he was for several years on the Committee of the Devon and Exeter Law Association, Vice-President in 1907-8, and President 1909-10.

His public services, especially to his native town, were many and varied. He served in the Tiverton Volunteer Corps (E Company), of which he was for several years the Commanding Officer, and at the outbreak of the great European War, in 1914, was instrumental in raising a company of National Reservists, 150 strong. For 20 years he was the Hon. Secretary of the Tiverton Hospital. As a Governor of Blundell's School and as Treasurer of the Old Blundellian Club, he did much to develop the resources and extend the fame of that School, one of his literary works being the compilation and publication of the School Register from 1770 to 1882.

In 1907 he was appointed H.M. Coroner for the Borough of Tiverton in succession to Mr. L. Mackenzie, and as Solicitor and Secretary to the Church Lands Trustees he was concerned with the administration of the endowments of the chief parochial charities of Tiverton.

Mr. Fisher was a brilliant speaker, a clever writer, and an acknowledged authority on the history and antiquities of Tiverton, and embodied the result of his researches in various lectures and contributions to the Press. He was also a great traveller, a Fellow of the Royal Geographical Society, and a member of the Hakluyt Society.

Among his varied accomplishments was included a

marked proficiency in the game of chess, and more than once he met and defeated some of the prominent players of his day.

He married in 1896 Marion, daughter of Major Braddon, of Hartnolls, Tiverton, who together with four children survive him. His eldest son obtained an Indian Army cadetship from Blundell's School.

LIEUTENANT-COLONEL REGINALD WILSON FOX. Colonel Fox, of Grimstone, Whitchurch, Tavistock, and of the 1-6th Devonshire Regiment, was born in November, 1866. He was the younger son of the late Charles H. Fox and Mrs. Fox, of Shute Leigh, Wellington, Somerset. Colonel Fox, who was a partner in the firm of Messrs. Fox, Fowler and Co., bankers, was well known in the town and district of Tavistock, where he took an active interest in local affairs. He was a county magistrate, and for some years was honorary secretary of the Tavistock and District Agricultural Association. Formerly captain of the Tavistock detachment of the 2nd Devon Volunteers, he afterwards succeeded to the command of the battalion, which under the Territorial Force Act became the 5th Devon Regiment. He retired from the command of this battalion, which he held for some years, and on the outbreak of the present war was appointed to the command of the 6th Devon Regiment, with which he went to India and later to Mesopotamia, where he was killed on the 8th March, 1916.

Colonel Fox married, in 1891, Mabel, third daughter of the late John William Pease, of Pendower.

He became a member of the Devonshire Association in 1914.

JAMES AMBROSE LORAM. James Ambrose Loram, who died at the age of 55 on the 1st January, 1916, became a member of the Association in 1912. He filled a large place in the public life of the City of Exeter, where he was City Councillor, a Justice of the Peace, Governor of the Royal Albert Memorial, Governor of St. John's Hospital, and a member of many other bodies in which he took a full share in the responsibilities of citizenship. Mr. Loram was also a well-known educationist, having held office as chairman of the old School Board and of the Education Committee, and also of the Shebbear Boys' College.

Outside Exeter Mr. Loram was known throughout the county as a leading denominationalist of the United Methodist connexion, and took an active part in bringing about the union of the Churches, which took place in 1908.

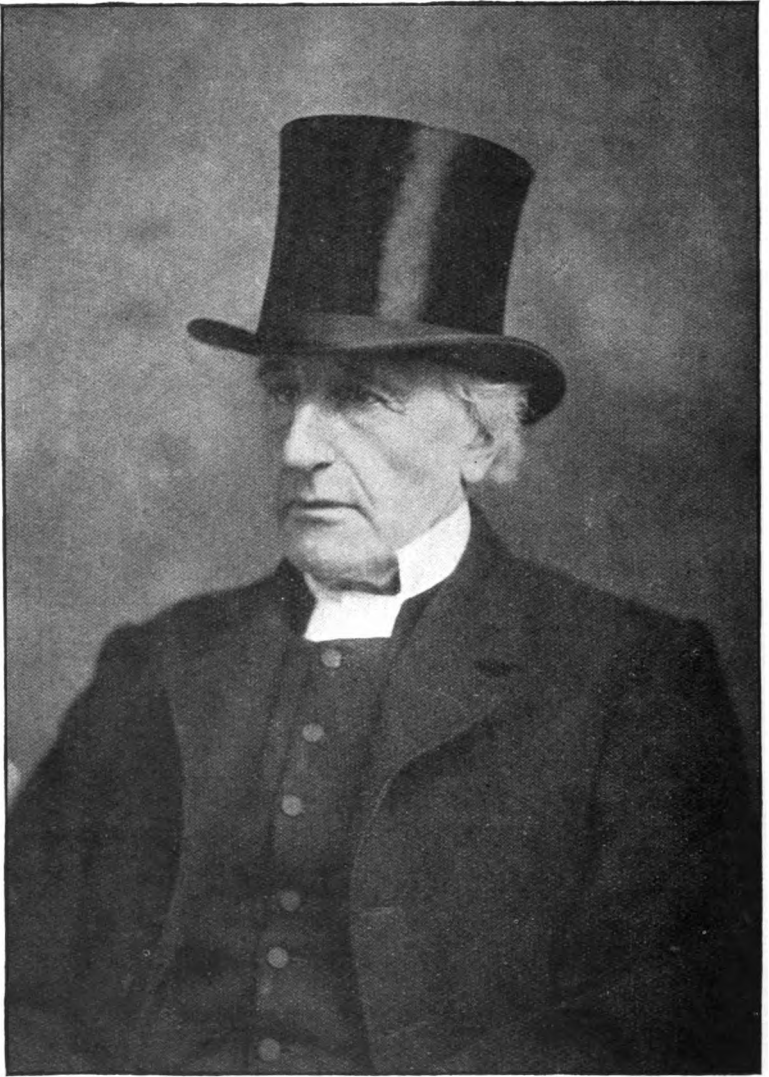
A broad-minded man, a ready speaker, and an able debater, he will be greatly missed in the public life of Exeter.

He was buried on the 6th January, 1916, in the family vault in the Old Cemetery, Bartholomew Street, Exeter.

SIR CHARLES HORACE RADFORD. Sir Charles Radford was the third son of Mr. George David Radford, and was born in Plymouth on May 31st, 1854. Having received private tuition from Mr. Stroud, a well-known educationist in Plymouth fifty years ago, he proceeded to Amersham Hall, Caversham, near Reading, where his education was completed, when he entered the firm of Messrs. Popham, Radford, and Co. in his seventeenth year, taking an active part in the management of the firm, and displaying considerable business ability till his retirement in 1896. In 1883 he married Bessie, daughter of Mr. William May, of Devonport.

He first entered the Town Council in February, 1891, for Charles' Ward, and in November of the following year he was returned as representative of Drake's Ward. Three years later, in 1895, when again nominated for that ward, he was returned, after a strenuous contest, at the head of the poll, and in the ensuing year, 1896, was unanimously elected Mayor. Following the extension of the borough boundaries by the inclusion of Laira and Compton, he thus became the first Mayor of Greater Plymouth. Notable among the events of his first Mayoralty was the Diamond Jubilee celebration of Queen Victoria, and with his characteristic thoroughness he took a leading part in the festivities of that historic event, the ball given by the Mayoress and himself being one of the most brilliant functions that has ever taken place in the Guildhall. During his year of office he laid the foundation-stone of the Museum and Art Gallery, which it was proposed to erect as a Queen Victoria Jubilee Memorial, and although the scheme, which was warmly supported by him, was abandoned, the bolder plan was consummated in 1910 by the opening of a Free Library and Art Museum.

In November, 1907, he again occupied the Civic Chair,



REV. WILLIAM HENRY THORNTON, M.A.

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OBITUARY NOTICES.—To face page 49.

and on Mayor Choosing Day it was publicly announced that the King had conferred on him the dignity of knighthood.

His services to his native town as Councillor were laborious to a degree, as indicated by the fact that he was a member of the Sanitary, Finance, Water, Housing of the Working Classes, Borough Extension, Tramways and Electric Lighting Committees, and for three years he was Chairman of the Municipal Offices Committee.

It was, however, to education that he mainly devoted his attention, and many useful developments were the result of his labours in this direction. On the retirement of Alderman J. T. Bond in 1906, as Chairman of the Education Committee, Sir Charles was elected to fill the vacancy.

No record of Sir Charles' career would be complete without mention of his services as a Justice of the Peace of the County of Devon since 1895 ; as a Borough Magistrate from 1906 ; as the representative of the Plymouth Town Council on the Cattewater Board of Commissioners, and as the first Chairman of the Buckland Monachorum Parish Council, he having for some time made his home at Axtown, Yelverton, being a devoted lover of Dartmoor. Philanthropical objects in Plymouth also found in him a liberal supporter.

He became a member of the Devonshire Association in 1889, and took a great interest in the arrangements for the meeting in Plymouth in 1916, for which he had been selected as Vice-President, which office unfortunately he did not live to fill.

THE REV. WILLIAM HENRY THORNTON. By the death of the Rev. W. H. Thornton, which took place on the 31st March, 1916, in his 87th year, the Association has lost one of the most valued and most revered of its members, his parishioners a beloved rector, the Diocese of Exeter one of the best known of its clergy, and the Church a fine example of that older and fast disappearing type of parish clergyman known as the "squire-parson." He was a man of reading, of learning, and of scholarship ; a man of wide sympathies and of simple piety, and a man, likewise, of business and affairs, a genial companion, with an abundance of good humour, and an endless store of anecdote, and in his younger days a keen and good all-round sportsman.

His loss will be greatly felt by a wide circle of friends and acquaintances of all classes.

Mr. Thornton was the youngest son of Mr. John Thornton of Clapham, Deputy-Chairman of the Board of Inland Revenue, and was born in 1830. Writing of him, his son-in-law, the Rev. Edward Robert Gotto, M.A., Vicar of Braunton, says :—

“ He came of a good stock, being a descendant of the Reverend Robert Thornton, the Royalist Rector of Birkin, Yorks, whose deprivation of his living and many privations during the Commonwealth are set forth in Walker’s *Sufferings of the Clergy*. He died in 1665, and there is a monument to him in Birkin Church. Among his descendants are many men distinguished in the public service of their country ; and not the least of these is the Samuel Thornton, of Clapham, and of Albury Park, Surrey, M.P. for that county, and, as a prominent member of what was called in those days. (*circa* 1770–1830) the Clapham Sect, an intimate friend of Wilberforce and Macaulay, and an associate with them in the emancipation of the slaves in our British Colonies. This Samuel Thornton was a leader, too, in the Evangelical Party in the Church of England, and it was at his house at Clapham that the Church Missionary Society—the most flourishing of all our Missionary Societies—was founded.”

The Rev. W. H. Thornton was educated at Rugby and Trinity College, Cambridge, where he took the degree of Bachelor of Arts in 1853, and was ordained Deacon at Exeter in the same year. His first curacy was that of Lynton and Countisbury, North Devon, 1853. In 1856 he was presented to the perpetual curacy of Exmoor, and thus became the first vicar of Simonsbath, where his energies were most remarkable, he treating lightly a fifty-mile ride, or a walk of twenty or thirty miles across the Moor.

In 1861 he was appointed vicar of Dunsford, where he remained till 1866, when he exchanged livings with the Rev. G. Allen, rector of North Bovey, which living Mr. Thornton held for fifty years, till his death, beloved and esteemed by his moorland parishioners, to whom he was not only a parish priest and faithful pastor, but also a kind and generous friend, ever ready to help the sick and the needy and anyone requiring his aid or advice. In 1871 he was elected Rural Dean of the Deanery of Moretonhamp-

stead, which office he held for eight years, and was during that period *ex-officio* Chairman of the Clerical Association, a society for the study of the Greek Testament. When Mr. Thornton ceased to be Rural Dean, the chairmanship became elective, and after nine years (in 1888) he was elected President of that Association, and so continued for twenty-five years. He looked upon his work for the Clerical Association as among the most important of his duties, and contributed many and valuable papers to its *Proceedings*, driving long distances to attend its meetings and receiving its members, when it was his turn to be host, with the greatest cordiality and hospitality.

Mr. Thornton was also an energetic public servant, and did excellent work as a member of the Newton Abbot Board of Guardians and of the Rural District Council, to which he was appointed in 1885 and held office till 1913. As a scholar and a man of considerable literary powers he was well known, as is shown by the numerous articles and papers which he contributed to various literary, historical, and scientific publications, including *Devon and Cornwall Notes and Queries*, the *Reports* of the Teign Naturalists' Field Club, of which he was an active member, and to the *Transactions* and *Proceedings* of several learned and other Societies, besides which he leaves a large number of MSS. on various subjects which afford delightful reading and testify to his great abilities and wide range of knowledge.

But his chief published works are his *Reminiscences of a West Country Clergyman*, in two volumes, issued in 1897 and 1899; *Countrymen in Council* (1901), *Notes on North Bovey and Neighbourhood*, and *Short Devonshire Stories* (1915). His contributions to the *Transactions* of the Devonshire Association, of which Society he became a member in 1868 (and thus was one of its very oldest members), were: *Some Reminiscences of the Wykes of South Tawton*, in vol. xxix. (1897); *Concerning some old Habits and decaying Industries formerly prevalent in the West of England and more particularly in the County of Devon*, and *Notes concerning the brief visit of Cromwell and Fairfax to Bovey Tracey and its Neighbourhood in 1646*, both in vol. xxxix. (1907).

There are few persons more familiar with Dartmoor, its people, its customs, its legends, or its ancient monuments than Mr. Thornton was. He was also a great lover of

animals and of natural history in all its branches, and was particularly devoted to horses, always keeping thoroughly good ones in his stable.

THOMAS WAINWRIGHT. By the death of Mr. Thomas Wainwright on the 28th April, 1916, in his 91st year, the Association has lost one of its most distinguished members, Barnstaple an honoured citizen, and the county a leading scholar, educationist, antiquary, and botanist.

Born on the 9th April, 1826, he commenced life in Bridport, where he carried on a private boarding school in East Street, and was also a member of the Town Council, a churchwarden of St. Mary's, the parish church in that town, during its restoration in 1860, and an authority on all matters of local history.

In 1865 he went to Barnstaple to conduct a private boarding school which had been established in Ebberly Lawn by Mrs. J. P. Harris, and in 1872 was appointed head master of the ancient Grammar School of Barnstaple. He filled this position with great ability until 1890, when he resigned in order to become the Librarian of the Athenæum, the gift to Barnstaple of his friend Mr. William Frederick Rock. For several years previously Mr. Wainwright had acted as Hon. Secretary of the Library and Scientific Institution, of which the Athenæum was the outcome and development. Through his untiring industry the Athenæum has become the repository of an unique collection of works and MSS. relating to North Devon.

As in Bridport, Mr. Wainwright was an authority on all matters pertaining to the history of North Devon in general and of Barnstaple in particular, and he was jointly responsible with the late Mr. J. R. Chanter for *Barnstaple Records*—a collection that is simply invaluable. He also published the Barnstaple Parish Register. He was a frequent contributor to *Notes and Queries*, as well as to the local papers, of articles dealing with local history, and his wealth of antiquarian knowledge was ever at the disposal of students and inquirers. His collection of materials bearing on antiquarian research is monumental, and it will be of immense value to future historians.

It is noteworthy that up to his 90th birthday he was engaged in the work of translating into English local incidents from the ancient Latin registers of the Bishop of

Exeter. These translations will undoubtedly prove of inestimable value as works of reference in years to come. In like manner Mr. Wainwright has catalogued, arranged, and translated the valuable old manuscripts in the municipal archives of Bridport. Their value cannot be overestimated as reliable historic records of the borough in the centuries that are passed. Mr. Wainwright took an enthusiastic interest in meteorological affairs, and was the means of making the Athenæum a centre for the collection of data relating to the whole of North Devon.

A keen educationist, Mr. Wainwright was for ten years a member of Barnstaple School Board, acting as Vice-Chairman for some years. He was a devoted Churchman, and for eighteen years acted as Lay Secretary of the Ruridecanal Conference for Barnstaple and Shirwell.

One of the oldest members of the Devonshire Association (in connection with which he did a valuable work), Mr. Wainwright was responsible (with Mr. W. P. Hiern, F.R.S.) for the inauguration of the local weekly botanical walks which for several years proved a delightful means of instruction to a band of enthusiastic students. The love of botany was a passion with him, and he maintained his custom of taking long country walks till almost up to the day of his death.

Mr. Wainwright was buried in the Barnstaple Cemetery in a grave adjoining that of his wife who had predeceased him. Four daughters, Mrs. A. J. Stephens, Mrs. Tancred, and the Misses Louie and Maud Wainwright, and a grandson, Captain Ernest Wainwright, of the Royal Marine Light Infantry, survive him.

THE HON. WILLIAM LIONEL CHARLES WALROND. Mr. Walrond, of Bradfield, Cullompton, M.P. for Tiverton, and railway transport officer, Army Service Corps, who was the younger and only surviving son of the first Baron Waleran, formerly Chief Whip of the Unionist party, and Chancellor of the Duchy of Lancaster, was born on the 22nd May, 1876. He was private secretary to his father when Chief Unionist Whip, and in 1906 was elected in the Unionist interest for the Tiverton Division. He married, in 1904, Charlotte Margaret Lothian, elder daughter of Mr. George Coats, of Belleisle, Ayr. His elder son, William George Hood, born March 29th, 1905, becomes heir to the barony.

When the great European War broke out Mr. Walrond was granted a commission as second lieutenant on October 22nd, 1914; and sailed from Southampton for France on 12th December, 1914; became a temporary lieutenant in the Army Service Corps on December 12th; and on May 23rd, 1915, was appointed to the staff as a railway transport officer, graded as a staff-lieutenant, 1st class.

He died 2nd November, 1915, from tubercular laryngitis, contracted while on active service in France, at Craigen-dinnie, Aboyne, the residence of his wife, his own house, Bradfield; having been converted into a convalescent home for soldiers, under the superintendence of Mrs. Walrond.

Mr. Walrond became a member of the Devonshire Association in 1910.

THOMAS KENNET-WERE. By the death of Mr. Kennet-Were on the 20th July, 1916, in his 80th year, the Association has lost one of its oldest members (he having become a life member in 1870) and Sidmouth one of its most respected inhabitants, where for many years he had been the prime mover in movements for the improvement of the resort and a supporter of all good causes. Not the least of his services have been those rendered upon the Devon County Council (of which he was an alderman), and the Devon Education, Finance, Standing Joint Committees. As a member of the Education Committee, he took a prominent part in the movement for the revival of the lace industry in East Devon. He served on practically every public body in Sidmouth. He was a co-opted member of the Urban Council, and held the office of Chairman of that body for 17 years. At the time of his death he was Chairman of the Sidmouth Tribunal, and a member of the Feoffees and the Burial Board. He was for many years the honorary secretary of Sidmouth Cricket Club. He was a Justice of the Peace for Devon, a director of the Sidmouth Water Company, and churchwarden of Sidmouth.

ADDRESS OF THE PRESIDENT,

E. J. ALLEN, Esq., D.Sc., F.R.S.,

Director of the Plymouth Laboratory of the Marine Biological Association.

18TH JULY, 1916.

At a time like the present, when the Empire we have inherited stands facing a crisis of its fate, when indeed the whole structure of civilization as we know it has seemed to sway, when that which generations of earnest thinkers have dreamt of as the progress of the race recoils before the forces it has itself unchained, it is difficult to restrain a feeling of incongruity in discussing any subject that has no obvious bearing on the greater problems of the hour. But I am convinced that we are following the right course in carrying on, with such help as remains available, the work of this Association, whose object is the advancement of Science, Literature and Art. In the short, swift cataracts of war, no less than in the gentler, steadier flow of peace, these matters of the mind have still their power.

In selecting a subject upon which to address you it has seemed to me best not to attempt to travel beyond the limits of that branch of Science with which my own studies have been chiefly concerned, and the science of Marine Biology is one which has special claims on a Devonshire Society. The work of Colonel Montagu at the beginning of the nineteenth century, which gave us the first descriptions of so many of our British marine animals, and by the acuteness and accuracy of its observations laid the foundation of future knowledge of their habits and life-histories, was practically all carried out in the Salcombe and Kingsbridge estuaries. Dr. Leach, the pioneer in the study of British Crustacea, was born at Hoe Gate House, within a few yards of Plymouth Hoe, and some of his collections still find a home in the museum

of the Plymouth Athenæum. Philip Gosse studied the shore life of our Devonshire coast at Torquay and at Ilfracombe, and his book on those British Anemones, which he found in such profusion at both these spots, remains a classic. It was at Plymouth that Spence Bate first followed the remarkable transformations that occur in the development of the common crab of our shores, and it was here that he procured a large part of the material upon which was based the monograph on British Sessile-eyed Crustacea, which he wrote in collaboration with Westwood.

It was due to the wealth of marine life discovered by these and many other local naturalists, that when in 1884 an Association, chiefly under the influence of the biologists connected with the Universities of Oxford, Cambridge and London, was founded for the study of marine life and particularly for the study of marine fishes, the site of the first Laboratory was fixed at Plymouth. The researches which have been carried out at that Laboratory have fully confirmed the view that we possess off the Devon coast a fauna as extensive and as remarkable for the variety of its forms as is to be found anywhere in northern Europe.

The sea fisheries of Devonshire occupy also a unique position in the history of British Fisheries, for it was the trawl fishermen of Brixham who, gradually pressing eastwards, extended their industry to Dover, Ramsgate and Yarmouth, until finally at Grimsby and Hull they laid the foundations of that immense trade, which with the coming of the steam trawler has taken toll of the most distant waters, from Iceland and the White Sea in the north to the coast of Morocco in the south.

You will, I think, agree that it is fitting that I should here, in passing, pay a tribute to the sturdy character and indomitable courage of the men of our steam fishing fleets. The Brixham traditions have survived. Those of us who had known the men and had sailed with them in times of peace knew already something of their worth, but the cool daring and patient bravery of their work since the war began has surpassed all expectations. It is not too much to say that to them, as much as to any men, we owe the protection of our commerce from the ruthless warfare of mine and submarine.

It is now many years since the first attempts were made to apply scientific methods to the study of problems

connected with sea-fisheries, and the subject has developed into what is almost a distinct department of marine biology. Were I to attempt to deal even with all the many branches of modern fishery research, it would be impossible within the limits of a single address to give more than a very superficial account of each of them. It will, I think, be more useful and offer a better prospect of securing your interest in the subject, if I confine myself to one limited question which has received in recent years a considerable amount of attention from fishery naturalists. The subject about which I propose to speak is that of the age of fishes and the rate at which they grow. It requires no elaborate argument to prove that the study of this matter is of the first importance if we are to give a rational account of the possible productiveness of a fishery, of the rate at which the fishery can be replenished, and of the intensity of fishing which may be prosecuted without endangering its future prospects as a means of profit to the fishermen and a source of food supply for the people.

To begin at the beginning, I need hardly remind you of the now well-known fact that the eggs of the majority of our marketable marine fishes are small, transparent, spherical bodies, which are buoyant and float freely in the sea. The fact that the eggs of a fish are of this character, which we describe as pelagic, was first discovered by G. O. Sars in Norway, in 1864, whose observations were made on the Cod. It was discovered independently in Cornwall in 1871, in the case of the Pilchard, by that enthusiastic fisherman-naturalist and acute observer, whose name will be well known to you, the late Matthias Dunn, of Mevagissey. The only important British sea-fish which is an exception to this rule of having pelagic eggs, apart from the skates and dogfishes, whose rate of growth I propose to leave out of consideration altogether, is the Herring, the spawn of which is deposited on the sea floor and attached to shells, stones and gravel.

The time occupied in the development of the eggs of different fishes, from the time they are spawned to the time of hatching, was shown by Dannevig (5) to be dependent upon the temperature of the water in which they float, the increase in the rate of development being in direct proportion to any increase of temperature.

The following table compiled by Dannevig shows the average number of days occupied in the development of

the eggs of certain species of fish at different temperatures :—

Temperature in Centigrade	1°	+3°	4°	5°	6°	8°	10°	12°	14°
Cod (<i>Gadus morrhua</i>) . . .	42	23	20½	17½	15½	12½	10½	9½	8½
Whiting (<i>Gadus merlangus</i>) . . .	—	—	—	15½	13½	10½	8	6½	5½
Haddock (<i>Gadus aeglefinus</i>) . . .	42	23	20½	17½	15½	13	10½	9½	8½
Plaice (<i>Pleuronectes platessa</i>) . . .	—	—	—	—	18½	14½	12	10½	—
Flounder (<i>Pl. flesus</i>) . . .	—	—	—	—	6½	5½	4½	3½	—

Time of incubation in days (24 hours).

These results have since been confirmed by Johansen and Krogh (16), working with more elaborate and accurate apparatus, and they have illustrated the relation between temperature and growth rate shown by Dannevig's figures by means of a graph,¹ in which the loci of the different observations for each kind of fish lie very nearly in a straight line, which means that the increase in rate of development, over the range of temperature examined, is directly proportional to the increase in temperature.

It follows, therefore, that the actual time, under natural conditions in the sea, which an egg takes to develop, from the time it is spawned until it is hatched, is by no means constant. There are, I believe, no actual observations on the point and direct evidence as to the time occupied would not be easy to get. If we suppose that temperature is the only factor that need be considered, it is possible to deduce from the data given by the laboratory experiments the time taken in particular instances. Thus, in the waters off Plymouth, Plaice spawn from December to March. Taking the temperature at 9° C., which is the mean for February, the coldest of the four months, the Plaice egg would, according to Dannevig's figures,² take thirteen days to hatch. In the southern part of the North Sea, on the other hand, which is a great spawning-ground for Plaice, the mean temperature for February is 7° C., at which temperature the eggs would take about sixteen days to hatch.

¹ The address was illustrated by lantern slides and the graph was shown.

² Cf. Apstein (1), p. 366. According to Apstein's figures the time would be nearer fourteen days at 9° C. and seventeen days at 7° C.

When they first emerge from the egg, the young fishes are small, transparent larvæ, whose form is very different from that of the adult fish, and the next points to consider are the time occupied by the period of transition from the larval to the adult form and the increase in size which accompanies this change of form.

In treating of this period of the life-history we will consider separately the ordinary round fishes such as Cod, Whiting, Mackerel and Herring, and flat-fishes like the Plaice, the Sole and the Turbot. In the case of the round fishes it is a little difficult to draw a sharp line of demarcation between the end of the larval and the commencement of the adult life, since both as regards structure of body and habits of life the one passes very gradually into the other.

The time occupied by the larval period may be illustrated by one or two examples. The principal spawning time of the *Cod* in the North Sea begins in January and is at its height in February and March. The larvæ when first hatched have a length of about 4 mm., the length after absorption of the yolk being 4.5 mm. At a length of 25 mm. the adult form has practically been reached. Little cod of this size begin to appear, often hiding under the bell of a jelly-fish, from the middle of May onwards, that is to say about four months after the beginning of the spawning in January. We may say therefore with some confidence that these small cod of 25 mm. or 1 inch in length are from three to four months old.

Some observations on larval mackerel taken off Plymouth in the summer of 1914 will illustrate the method, a somewhat laborious one, it is true, by means of which the rate of growth of these young stages may be investigated. During May, June and July a large net of fine mesh—the Petersen young-fish trawl—was used at frequent intervals, chiefly between Whitsand Bay and the Eddystone, for the purpose of collecting young stages of fish. Young Mackerel first appeared on the 25th of May and they continued to be caught fairly regularly until the end of June, whilst in July only three specimens of these early stages were found during the whole month. All the specimens captured were preserved and subsequently measured. The numbers taken at any one time were small, thirty-two being the largest number in a single haul of the net, but if we combine the figures obtained from the different hauls into two groups, certain interesting features

appear. The following diagram represents the figures in a graphic form, the measurements being in millimetres¹ and each fish being represented by a dot :—

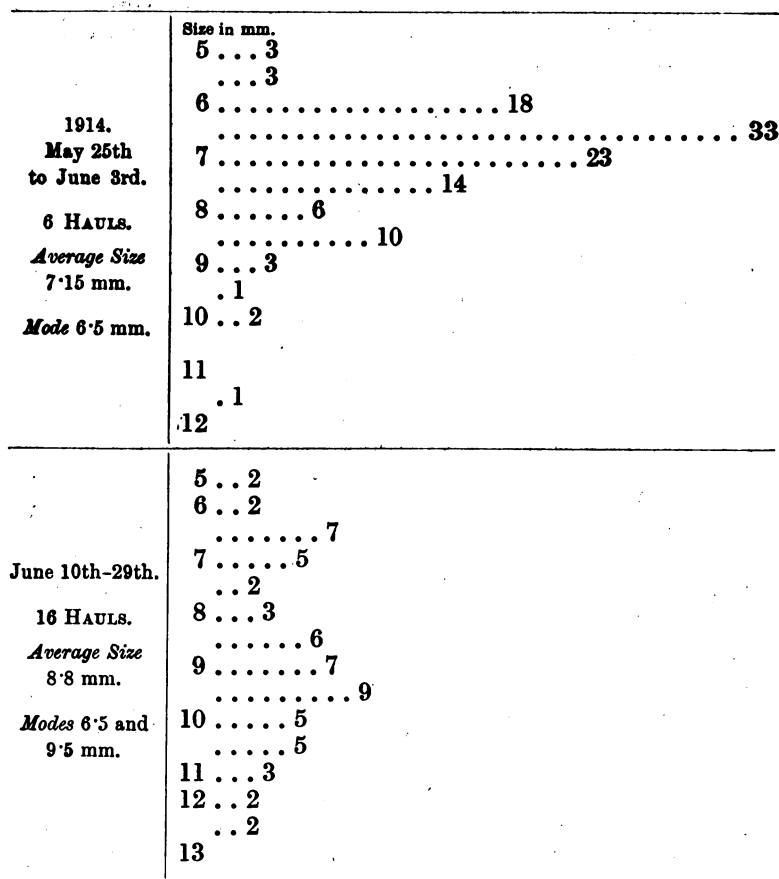


FIG. 1.—LARVAL MACKEREL.

In the first group of hauls, which we may call the end of May group, the size of greatest frequency is 6.5 mm. and the numbers form a fairly regular curve about this mode, the average size of all the measurements being 7.15 mm. In the second group of hauls, the middle of June group, the numbers range themselves round two

¹ A table showing the relation between British and Metric measures will be found on p. 84.

centres of frequency or modes, one at 6.5 mm., the other at 9.5 mm. Although the numbers are not perhaps sufficiently large to be conclusive, they at least suggest that these 9.5 mm. fish belong to the same batch of larvæ as the 6.5 mm. fish of the end of May group, whilst the smaller fish represent a new batch of young, derived presumably from another shoal of spawning Mackerel. If this be so, we should, I think, be not far wrong in concluding that a growth of 3 mm. took place in the three weeks' interval from the middle of the period May 25th to June 3rd and the middle of the period June 10th to June 29th.

I give this actual instance from our own observations merely as an illustration of the way in which the problem of the rate of growth of larvæ in the sea under natural conditions may be attacked. To arrive at perfectly certain and definite results a much larger number of specimens would be necessary, and confirmation in different years would be required.

The Cod and the Mackerel, whose larval growth we have just been considering, are typical instances of ordinary round fishes. We will now look for a moment at the flat-fishes in which a distinct and rapid change both in structure and habit of life takes place at the end of the larval period. The young fish abandons its pelagic existence, during which it swam freely through the mass of the water snapping here and there at the small floating creatures upon which it feeds, and takes to lying on its side on the sand at the bottom, feeding on small worms, shell-fish and crustaceans which the sand contains. This change of habit is accompanied by a twisting of the whole structure of the skull, in such a way that both eyes come to lie near together on one side of the fish,—on the coloured side which is uppermost as the fish rests upon the sand.

[A series of slides showing the metamorphosis of a flat-fish was shown.]

This change in structure and habit gives us a fixed point in the life-history of the fish, and for the purpose in hand we require to know for what length of time the free-swimming larval stage is continued, from the time that the larva leaves the egg until it settles down as a little flat-fish adapted to life on the sand. Unfortunately the evidence available is not sufficiently detailed to enable us to fix this time with the degree of accuracy which we should desire, though an approximate estimate of its duration can be

made for certain species. For instance, the Plaice in the southern part of the North Sea commences to spawn in January; spawning is at its height in February and continues into March. The youngest bottom stages of the Plaice, immediately after the transformation, are found in quite shallow water along the margins of sandy bays and are often taken by shrimpers, working with push nets on the shore. According to the researches of Dutch naturalists (Redeke, 20, p. 40) these small Plaice appear at the beginning of April on the Dutch coast and they become numerous in May. If, therefore, we allow two to three weeks for the eggs to hatch, we are left with about ten weeks for the larval stages. It must be admitted that this is a very indefinite statement, but it is, I think, as near as we can get on the evidence at present available. The times will doubtless vary considerably in different localities and also in different years, owing to differences of temperature and of the food-supply available.

In the case of the Sole, which was reared by Fabre-Domergue and Biérix (6) in the laboratory at Concarneau, the pelagic larval stage lasted about seven weeks, but this of course does not give us a reliable figure for the time taken under natural conditions in the sea.

The length at which the transformation is complete and the bottom life commences is in the case of the Plaice from 14–15 mm., for the Sole it is 10–11 mm. The sizes at the time of hatching are 6–7.5 mm. for Plaice, 3.2 mm. for the Sole.

We may say in general, then, that the adult characters in most fishes are established at the end of about three months from the time of spawning, and when the length is from a quarter to half an inch.

In order to determine the rate of growth subsequent to this period various methods have been employed and for some years past considerable attention has been given to the subject. It is possible, of course, to study the matter directly by keeping fishes in confinement and measuring them from time to time. But we can get little really valuable information in that way, as it is soon seen that the rate of growth depends very largely on the conditions in which the fish are placed, on the volume of fresh sea-water supplied to the tanks, on the temperature of the water, and on the amount and nature of the food which is supplied. This is an interesting study in itself,

and from some points of view may prove to be of practical importance, but it really tells us little or nothing as to the rate at which the fishes grow under natural conditions in the sea, which is the point of main importance.

Dr. Petersen of Copenhagen was the first naturalist to place the study of the subject on a sound scientific basis (Petersen, 19) and the method he employed is still perhaps the most useful for dealing with the first one or two years of a fish's life. It consists simply in making a large and representative collection of the fish to be studied, from a particular locality and as nearly as possible at the same time, measuring the length of each individual fish and then plotting the measurements in the form of a graph or curve.

The following curve [cf. Hjort and Petersen (11), Plate IV] in which 8046 Cod,¹ caught off the East Coast of Iceland in July, 1904, are graphically represented (Fig. 2), illustrates the method. Each fish was measured and the numbers found at each centimetre are plotted. It will be seen at once that the fish group themselves around certain definite lengths. The smallest sized fish in the collection was 3 cm. long, and of this size there were 6 fish. At 4 cm. there were 65, and at 5 cm. 189. The numbers then begin to fall, there being only 43 at 6 cm., 8 at 7 cm., and but one fish at 8 cm. Then they rise again until another maximum occurs at 12 cm., with 139 fish. At 17 cm. the number has fallen to 12, after which another rise occurs until at 22 cm. we have 107. In this way the fish fall naturally into the six groups O-V. This division into size groups is due to the fact that the spawning season of the Cod in each year is a limited one, extending over only two or three months at the beginning of the year—January, February and perhaps March. By July the fish born at that time will have reached about 5 cm. in length. The next maximum at 12 cm. represents the fishes born the year previously, and the difference between 12 cm. and 5 cm., i.e. 7 cm., expresses the growth in length during the year. Then at 22 cm. we have the fish which have completed two full years, these fish in July when the samples were taken being two and a half years old.

¹ The number of fish at 45 cm. has been taken as forty-seven instead of ninety-seven given by Hjort, which appears to be a misprint. Forty-seven agrees with what is shown in the graph and is in accordance with expectation.

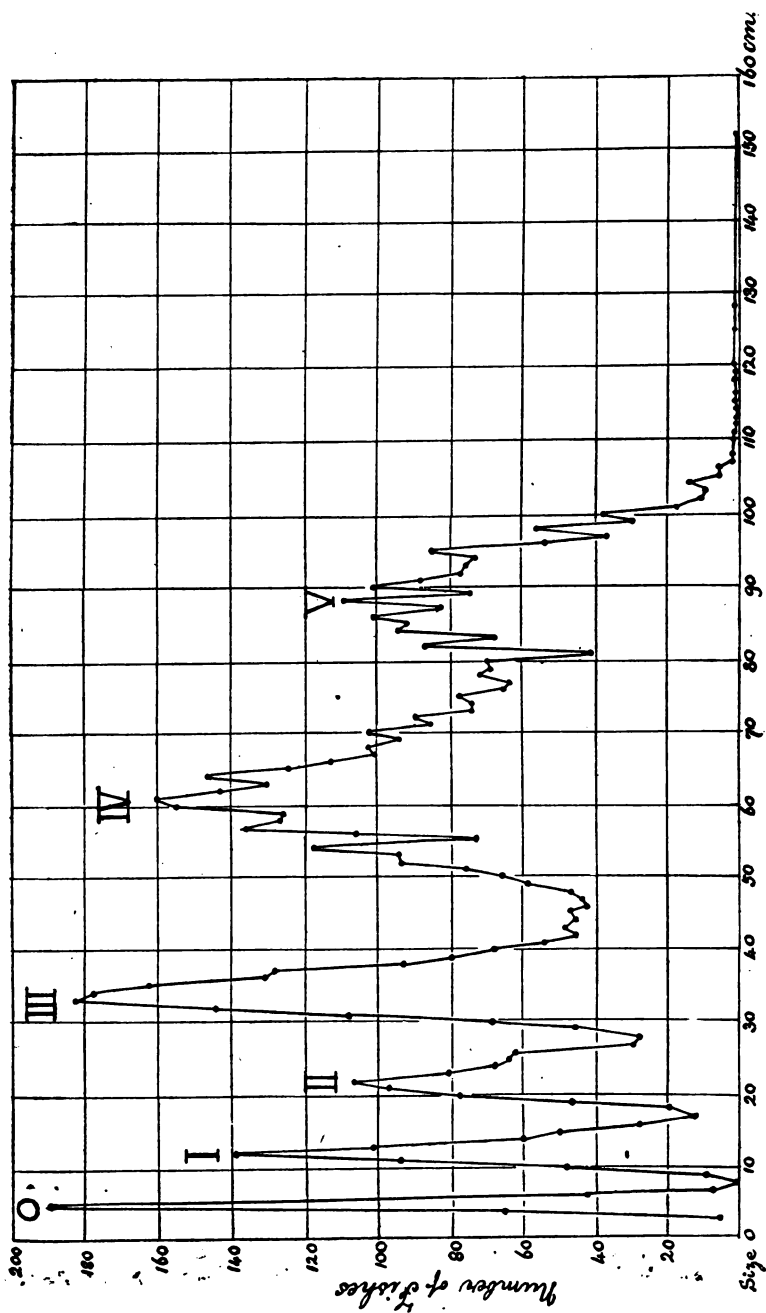


FIG. 2.—Curve showing the distribution according to size of 8046 Cod caught off the East Coast of Iceland in July, 1904.
(After Hjort and Petersen.)

Since all the fish were caught in 1904 we are able to say in what year each group was born, the V group, with a maximum frequency at 88 cm., being Cod born in 1899.

Now, although this method is satisfactory for the early years, the distinction between the groups becomes much less marked as the fish grow older, until finally the different year-groups run into one another and become indistinguishable. Fortunately, however, other methods have been discovered which enable us to attack the problem of age and rate of growth with even greater precision.

In the year 1898 Hoffbauer (13) published a paper in which he showed that the age of a fresh-water carp could

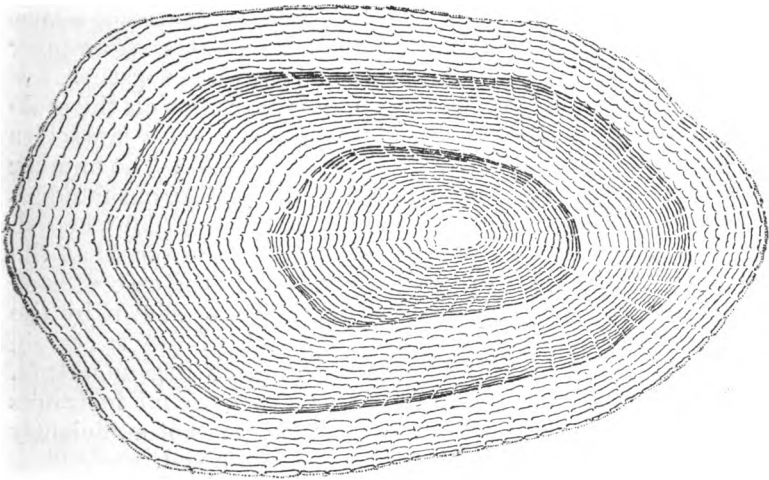


FIG. 3.—Scale of Coal-fish (*Gadus virens*). (After Damas.)

be determined by an examination of the markings on the scale. In 1902 Stuart Thomson (22) published an account of some work carried out at the Plymouth Marine Laboratory in which he showed, for the first time, that a similar method was applicable to sea-fishes, his researches having been made upon fishes of the Cod family—the Gadidae—especially on Whiting and Pollock.

Fig. 3 is from a drawing of the scale of a coal-fish (*Gadus virens*). The surface of the scale appears covered with a series of concentric rings or ridges. When growth is proceeding rapidly there is a considerable space between succeeding ridges, when growth becomes slow the ridges

crowd closely together. But the fish grows most rapidly during the summer months, when the water is warm and food is plentiful, whereas during the winter growth becomes slower and slower, and even ceases altogether. It is during this winter period of very slow growth that the concentric ridges on the scale become crowded together and give the appearance of a darker ring on the surface of the scale. On the scale figured there are two such winter rings and the growth of the third summer is well advanced.

That this explanation of the appearance presented by the scale is the correct one has been proved by the examination of scales taken from fish caught at different times of the year. A fish captured in summer, such as the one illustrated, has the ridges far apart at the margin of the scale, whilst in fishes captured as the season advances towards winter the ridges round the margin become crowded together.

In the case of the Cod family these markings on the scale are especially distinct and the examination of a few scales is generally sufficient to fix the age (Winge, 25). The number of winter rings formed by the crowding together of the ridges tell us at once the number of years of life which the fish has completed. It must be remarked, however, that the appearance of these winter rings is not in the case of each individual fish as clear and definite as that shown by the scale illustrated, and in a large batch of fish a certain number will be doubtful and the exact age a little uncertain. By examining large samples these exceptional instances cease to have any importance, as they are not sufficiently numerous to alter the average values obtained.

The Salmon is one of the fish the age of which is often well shown on the scale, and a good deal of work has been done upon it (Masterman, 18). The Herring is another case which I shall consider in more detail presently.

In certain other fishes, as for example the Plaice, the scales, although they show indications of similar winter rings, are not marked sufficiently clearly to make them easily available for age determination. Fortunately, however, other structures of the fish have been found which show in a very definite way alternating rings expressing different rates of growth; which enable us to estimate age with great accuracy. These structures are (1) the otoliths or ear-stones, and (2) certain of the bones of the fish. In the Plaice, the fish to which this method has been chiefly applied, the age of the younger fishes up

to about six or seven years old is best seen on the otolith, that of older ones on the bones.

The otoliths or ear-stones (Fig. 4) are small, oval, calcareous bodies which lie in the cavity of the inner ear. They can be removed easily for examination from the dead fish by making a single incision in the head in an appropriate direction, and an inspection with a simple lens generally suffices to make an age determination (cf. Reibisch, 21).

As will be seen from the figure, alternate white and dark rings are seen, when the otolith is examined by reflected

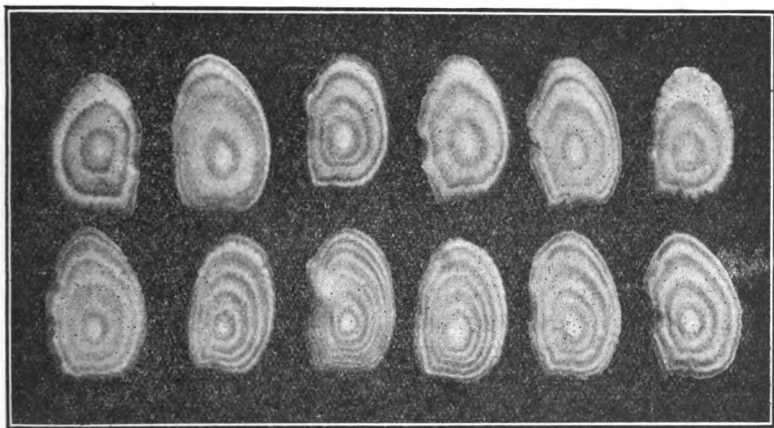


FIG. 4.—Otoliths of mature male Plaice. Upper row—Otoliths of Plaice from the West Bay (English Channel). Lower row—Otoliths of Plaice taken in the southern deep water of the North Sea, near the Gabbard Light Vessel. (After Wallace.)

light. The white rings are formed in spring and early summer, the dark rings in late summer and autumn. During the winter practically no growth of the otolith takes place. The first white ring is formed in the spring following the year of birth; that is when the fish is just one year old, and the total number of white rings will therefore give us the number of years of life which the fish has completed.

As the Plaice gets older, however, the rings at the edges of the otoliths are so crowded together that it becomes impossible to count them. For these older fishes Heincke (9) has shown that an examination of the bones, after special treatment, gives the information required.

It is clear that if we can determine the age of individual fishes, and if we do this on sufficiently large samples, we at once obtain some information as to their rate of growth, for if, say, the average size of the two-year-old Plaice in a particular locality is 20 cm. and the average size of the three-year-olds is 25 cm. we shall not be far wrong in concluding that a Plaice of 20 cm. will grow about 5 cm. during the next year of its life. This conclusion, however, assumes that the conditions of growth are the same each year, and from information now available we know that this is not always true, but that some years are more favourable for growth than others. Growth in different localities, also, even though they may not be very distant from each other, may differ greatly. What we can obtain by the use of the methods already described, if the observations are repeated for a number of years, is the *average* rate of growth for each year of age.

There are, however, other methods by means of which we can get an idea of the actual rate of growth in a particular area at a particular time. The one which has been most used and has yielded the most reliable results is the method of marking experiments. In these experiments a healthy fish is measured soon after being caught and a small metal label is attached to it, generally at the base of the dorsal fin. The label is numbered and the fish is returned to the sea. When it is subsequently caught again by the fishermen it can be identified by its number and measured a second time. The actual amount of growth will then be known. A great many experiments of this kind have been made on both Plaice and Cod, and large numbers of the fish have been caught and returned by the fishermen to the various laboratories. Even these experiments, however, which were carried out primarily to give information as to the migrations of the fish, are subject to at least one possibility of error, owing to the fact that the future growth of a fish may be considerably retarded by any slight injury it may have sustained when it was first caught. This source of error has to some extent been overcome by keeping the fish in tanks of running sea-water for some time before they are measured and marked, and only using such fish as appear to be quite uninjured and full of vigour.

We must now pass on to consider some of the conclusions which have resulted from the use of these methods

of investigating age and growth rate. In the case of the Plaice, the researches of Dr. Wallace, which were carried out at the Lowestoft Laboratory of the Marine Biological Association, are amongst the most important. The method he employed was the study of the otoliths, his results being based on a total of 20,000 fish, each of which was measured and its age determined. In addition to this Wallace makes use of the records of the otoliths of another 20,000 measured Plaice collected by the Board of Agriculture and Fisheries (24). These numbers will give some idea of the extent of the investigations which have been made.

The following table embodies the result of the analysis as regards age of two series of samples of Plaice trawled by Wallace along a line nearly at right angles to the Dutch coast, from Texel to the Leman Banks, commencing about three miles from the shore and running out some eighty or ninety miles into the North Sea. The samples were taken in May and September, 1905. (Wallace, 23, Rep. II., Pt. I., p. 26.)

1. Males.

The I group averaged 9.4 cm. in May and 14.9 cm. in Sept.

II	16.2 cm.	19.9 cm.
III	22.2 cm.	25.4 cm.
IV	27.2 cm.	29.3 cm.
V	31.6 cm.	33.7 cm.
VI	34.8 cm.	34.5 cm.

2. Females.

The I group averaged 10.3 cm. in May and 15.2 cm. in Sept.

II	16.8 cm.	20.9 cm.
III	23.6 cm.	25.8 cm.
IV	28.3 cm.	30.9 cm.
V	34.3 cm.	37.7 cm.
VI	38.5 cm.	41.3 cm.

[A number of diagrams were also shown illustrating Wallace's results.]

The samples of fish from which these figures were derived were taken, as already stated, upon a line extending from the Dutch coast seawards to a distance of eighty or ninety miles. Wallace was the first to point out that if we are to obtain really accurate values for the average size of the Plaice belonging to any particular age-group in a given locality, we can only do so by collecting samples

that is fish between three and four years old, on the line running out from the Dutch coast—from Texel to the Leman Bank—we shall see that this group is taken along the whole line. It is most abundant near the coast, where the average size of the fish is small, and the numbers captured gradually diminish as we move seawards, the size of the fish at the same time becoming larger. The chart also shows that between May (represented by the circles) and September (the squares) there has been a distinct shifting of the group of fish seawards as they have grown larger.

It will be clear, therefore, that if the fish are distributed in this way according to size, we must take uniform samples all along the line in order to obtain the true average size of those belonging to any age-group. If, for instance, in the case of this III Group we took samples only near the coast we should miss all the larger fish belonging to the group, whereas if we took samples only at the seaward end of the line we should miss all the small ones. In the latter case our average would be far too high, in the former case it would be far too low. Wallace therefore is quite justified in maintaining that samples of Plaice for age determination must be taken upon such radial lines, if accurate average sizes for the different years of age are to be obtained.

One of the points which has come out most clearly in the course of these studies is the great differences in rate of growth which are found, firstly at different seasons of the year, secondly in different years, and thirdly in different localities.

As regards seasonal differences we may say that in the North Sea the year's growth begins in the spring, about the month of April; it goes on vigorously during the summer until September, slows down in October, and from that time until the following April there is practically no growth at all, at any rate in the shallow water near the coasts. In the central portions of the North Sea, for example on the Dogger Bank, a certain amount of growth does seem to take place in the winter.

The evidence for differences in the rate of growth of Plaice in different years is chiefly based on the work of the Danish naturalist Johansen (14), who has studied the question by means of marking experiments carried out off the North Sea coast of Denmark. Thus the average

annual growth for specimens of 20 to 29 cm. liberated in the Horn Reef area in 1903 was only about 4 cm., whilst in 1904, 1905, 1906 and 1907 it was from 6 to 7.5 cm. In this connection Johansen notes the interesting fact that in 1903, when the growth was abnormally low, there was an unusually rich stock of under-sized fish on the Horn Reef grounds, which suggests that the rate of growth may depend, amongst other things, upon the density of the Plaice population (Johansen, 14, III. p. 37).

It is possible, therefore, that a certain amount of fishing on grounds overcrowded with young fish may tend to increase the rate of growth of the fish that remain.

That the rate of growth of Plaice differs widely in different localities may be inferred from the fact that the average length of the different age-groups is different in different areas, provided always that the samples on which the figures are based are adequately distributed or at least properly comparable. Thus Wallace's samples show that Plaice of the II Group in August, that is fish two and a half years old, average 6 cm. longer in Tor Bay on the South Devon Coast than those in deeper water on the Leman Banks in the North Sea, and 11 cm. longer than those from the shallow water off the coast of Lincolnshire, the Devon fish being thus from one to two full years ahead of those from the North Sea.

This rapid growth of the Devon fish is clearly reflected in the structure of the otolith, as will be seen from Fig. 4. The broad white rings are in marked contrast to the narrow rings of the North Sea fish (Wallace, 23, Rep. III. p. 142A, Figs. 6 and 7).

The following table summarizes Wallace's results as to the average size of Plaice of the different age-groups in different localities :—

AVERAGE SIZES OF THE PRINCIPAL AGE GROUPS OF PLAICE FROM DIFFERENT FISHING GROUNDS.

From Wallace [23] Report III., Tables 11 to 16, pp. 136-141. Length in centimetres.

AGE GROUPS.	MALES.						FEMALES.						
	I	II	III	IV	V	VI	I	II	III	IV	V	VI	VII
Texel to Leman Banks. September, 1905. 7-17 fms. .	14.9	20.0	25.4	29.3	—	—	15.1	20.9	25.8	30.9	—	—	—
Texel to Leman Banks. May, 1906. 13-17 fms. .	—	14.6	21.3	27.3	30.9	—	—	14.9	22.5	28.8	32.9	—	—
Scheveningen and Southern Deep Water. May, 1906. 12-23 fms. .	—	16.5	21.9	27.7	31.1	—	—	17.7	22.7	29.1	32.4	—	—
South Dogger and Flamboro' Off. Winter (Oct.-March) .	—	—	29.1	34.1	37.0	38.1	—	—	30.4	36.6	41.0	44.1	47.5
Great West Bay (English Channel). Winter (Nov.-Feb.). 3-7 fms., 17-30 fms.	20.3	27.1	31.0	32.9	—	—	20.4	28.3	31.8	35.5	—	—	—
Tor Bay and Start Bay. August, 1909. 3-8 fms. .	18.3	27.9	31.3	—	—	—	18.4	27.7	33.5	37.4	41.3	—	—

From this table it is possible also to compare the difference in rate of growth of males and females. It will be seen that on the whole females grow more rapidly than males, and that this difference tends to increase as the fish grow older.

The great differences which may occur in the rate of growth of Plaice on different grounds are strikingly shown by the results of the transplantation experiments carried out by Garstang and Borley in the North Sea [Garstang (7), Borley (2), Lee and Atkinson (17)]. Small Plaice

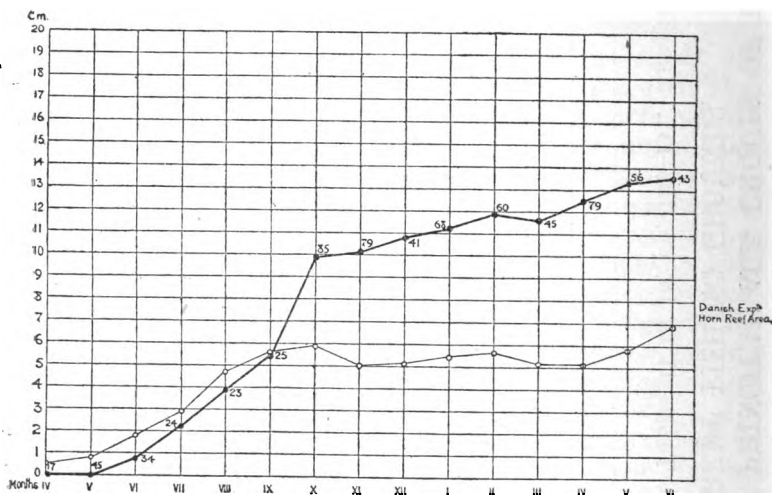


FIG. 6.—Showing growth of fish transplanted to the Dogger Bank in the combined experiments of the years 1904-8 compared with that shown by the Danish marking experiments in the Horn Reef area in the years 1903-5. (After Borley.)

caught on the shallow young-fish nurseries off the Danish and Dutch coasts were carried in sea-water tanks to the Dogger Bank, which lies in the middle of the North Sea. They were then measured, marked with numbered labels and liberated. The transplantation was carried out in May, and during the following year large numbers of the marked fishes were returned by the fishermen. The amount of growth shown by the following autumn and winter was very remarkable. Small, under-sized fish of little or no market value had become fine Plaice, of good size and in excellent condition. The preceding diagram (Fig. 6) shows the growth of these transplanted fish,

compared with the growth of fish of the same size which had remained on the inshore grounds. Taking the figures for, say, the following January, whereas the average length of the transplanted fish was 11 cm. the size of those left on the Horn Reef ground was about 5.5 cm.

If instead of considering the length of the fish we take the percentage increase of weight the result is even more striking. Whereas by the following spring the fish that remained on the Danish Horn Reef ground had increased in weight by 100 per cent., that is to say, had doubled their weight, those put out on the Dogger had increased their weight by 400 per cent., that is to say, they were five times as heavy as they were originally.

Since well-grown Plaice command a much higher price per lb. than small ones this increase of weight means that the value has increased to perhaps seven times the original value.

These results of investigations on the age of Plaice and their rate of growth have several important practical aspects, apart from the suggestion of a direct improvement of the fishery by the transplantation of young fish from crowded nursery grounds to rich feeding grounds such as the Dogger Bank, where the rate of growth is much more rapid. It would seem that the most profitable fishery would result from concentrating the fishing as much as possible on Plaice of the Age Groups IV, V and VI, that is to say, on fish in the fifth, sixth and seventh years of their life. Before this they are small, but capable of rapid growth and rapid increase in value. After the seventh year the growth gets slower, and as long as a sufficient supply of mature fish is allowed to remain to ensure an adequate amount of spawn for the perpetuation of the race, it would appear that from a commercial point of view it is of greater advantage to put the seven year olds on the market rather than to allow them to remain in the sea. They would increase in value very little compared with the amount of nourishment they would consume, whilst when they are removed the food they would have eaten becomes available for the younger fishes, which grow in size and value at a much more rapid rate.

In this connection the *age* at which the majority of Plaice mature for the first time is important. According to Wallace (24, p. 40) for female Plaice this "age of first maturity" in the Southern North Sea is five years, in the middle North Sea six years, and further north seven years.

In the English Channel, on the other hand, the bulk of the females reach maturity at *four* years of age. The average age for the males may be a year earlier than for the females.

We have now perhaps devoted sufficient attention to the Plaice, and will pass on to consider certain investigations into the age of the Herring, which bring out very clearly another application of a knowledge of the age of fishes, which may have an important practical bearing. These investigations we owe especially to the energy and enterprise of Norwegian naturalists under the leadership of Dr. Johan Hjort.

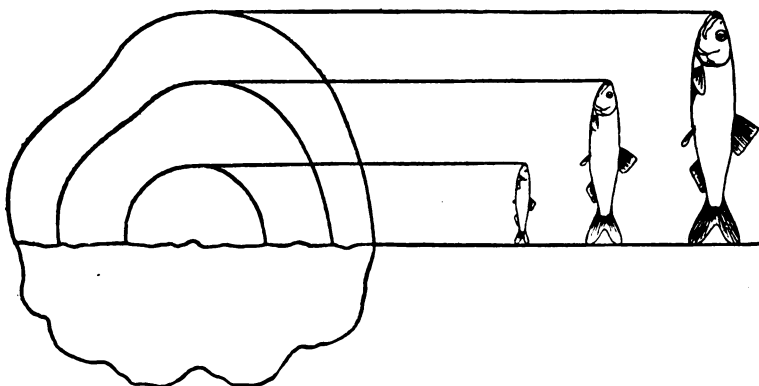


FIG. 7.—Growth zones of herring scales compared with size of fish.
(After Hjort.)

As with most marine fishes, the growth of the Herring comes practically to a standstill during the winter. This winter rest is clearly indicated by a ring-like mark on the surface of the scale, these rings being often very definite and precise.

That each ring really does represent the cessation of growth during the winter has been proved by Lea, by examining samples of Herrings month by month during the year (12), in the same way as was done by Wallace with the otoliths of the Plaice. It was possible to follow the band of summer growth becoming wider and wider, until as winter came on it ceased, and the darker ring was found at the margin of the scales. This being so it is obvious that an examination of the scale can tell us a good deal more about a fish's history than merely its age. We can indeed infer the length of the fish at the end of any particular year of its life, for it has been possible to show

that the length of the fish is always proportional to the length of a particular scale. If, therefore, we magnify the scale until its total length from the median transverse line to the edge is equal to the length of the fish, the distance from this line to each of the winter rings will be the length which the fish had at the time the ring was formed. This will be clear from the diagram Fig. 7.

Fig. 8 illustrates the composition of three samples of Norwegian Spring Herring taken in March, 1907, and

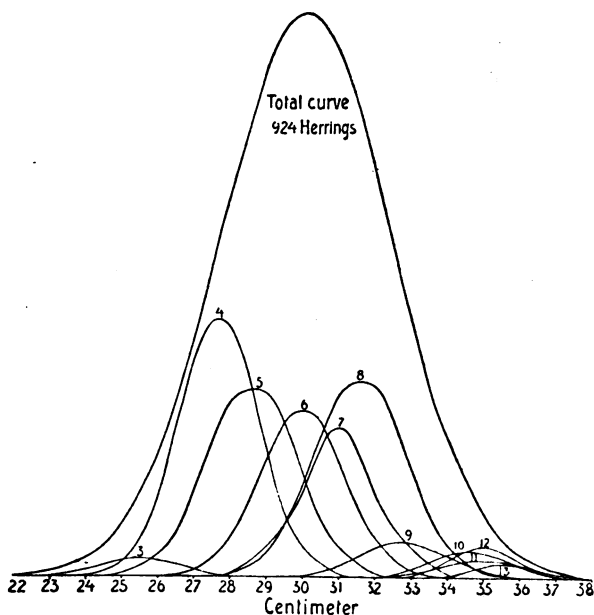


FIG. 8.—Analysis of three samples of Norwegian Spring Herring taken in March, 1907, into age groups. (After Dahl.)

analysed by Dahl (3), by an examination of the scales, into age groups. It will be seen that the majority of the fish belong to the IV, V, VI, VII and VIII year-classes, the best-represented class being IV. The position of the apex of each curve gives us the size of fish most frequently found in each age group.

Samples of Norwegian Spring Herring have been examined in this way every year since 1907 and the results obtained are given in the following table, the number of fish belonging to each year-class being expressed as a percentage of the whole sample (Hjort, 12, p. 219, Table I).

AGE OF NORWEGIAN SPRING HERRING IN THE YEARS 1907-1914.

THE REPRESENTATION OF EACH YEAR-CLASS IS GIVEN IN PERCENTAGES.

YEAR-CLASSES	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1907 . . .	1.6	22.2	18.5	14.8	12.6	19.4	3.4	2.3	1.7	2.2	0.9	0.5	—	—	—	—
1908 . . .	—	34.8	12.2	11.6	11.1	8.5	14.4	1.9	1.1	1.5	1.5	0.6	0.3	0.1	0.1	—
1909 . . .	—	0.4	43.7	11.9	4.1	4.8	6.7	17.6	3.3	2.6	1.6	2.3	0.4	0.2	0.4	0.2
1910 . . .	—	1.2	9.9	77.3	6.7	1.0	0.4	1.1	2.0	—	—	—	—	—	—	—
1911 . . .	—	0.6	4.1	17.3	70.0	5.5	1.5	0.6	0.5	0.1	—	—	—	—	—	—
1912 . . .	—	1.6	3.1	3.9	14.5	64.3	6.4	1.6	1.2	1.2	1.5	0.6	0.1	—	0.1	—
1913 . . .	0.1	0.7	2.2	3.4	4.8	13.3	64.7	5.1	1.2	1.2	0.5	0.2	0.2	—	—	—
1914 . . .	—	0.6	3.3	6.9	5.2	7.2	13.9	54.3	5.0	1.5	1.2	0.4	0.5	—	—	—

An examination of the figures in this table reveals a very remarkable fact. If we commence with the year 1908, we see that 34.8 per cent. of the fish belong to the year-class IV, that is to say, they are fish which were born in the year 1904. We see further that no other year-class is nearly as well represented, the next in order being the IX year-class, of which the sample contains 14.4 per cent. Now look at the percentages for the year 1909; the best represented class is the V year-class, with 43.7 per cent. But in 1909 the V year-class is composed of fish born in 1904. In 1910 the VI year-class, with 77.3 per cent., completely dominates the others; still the fish born in 1904. In 1911 the VII year-class, in 1912 the VIII year-class, and in 1913 the IX year-class still form from 64 to 70 per cent. of the whole population, the fish in each case being those born in 1904. In 1914 these fish still form 54.3 per cent. of the whole. Thus it will be seen that for six or seven years this one year-class of 1904 dominates the fishery. If we look at the figures still more closely we shall see further evidence that a particular year-class may be of special importance over a series of years. In 1910 the fish of year-class V formed 9.9 per cent. of the sample, being the second largest of the year-classes present. These fish were born in 1905. In 1911 these 1905 born fish belong to the VI class, and again they are second in importance with 17.3 per cent. The class occupies the same position in 1912 and in 1913, when the fish are seven and eight years old respectively. Similarly the fish born in 1899 form the VIII group in 1907, the IX group in 1908, and the X group in 1909, the group in each case being present in considerably greater numbers than fish of the adjacent groups.

The herring fishery is one which is subject to very great fluctuations from year to year, and to those who have watched the fishery for many years it is a well-recognized fact that bad and good years often run in series. After a number of poor or average years the fishing begins to improve and remains successful for three or four years in succession. In the case of the Norwegian Spring Herring fishery the years from 1909 to 1913, when the fish of the 1904 class predominated, were exceptionally good years, with a very high yield, the year 1913 especially being the best fishery during the whole period from 1896 to 1913 (Fig. 9).

We are furnished, therefore, with what appears to be a distinct step in advance in our attempts to find a rational

explanation of the fluctuations in the fisheries. A season occurs in which the conditions are exceptionally favourable for the production of young fish, either owing to an exceptional supply of nourishment upon which the larvæ and fry can feed, or to the absence of enemies, or to some other cause which at present has not been traced. As these fish grow up they year by year come to form a more important factor in the yield of the fishery and the abundance of fish caught increases. In the case we have con-

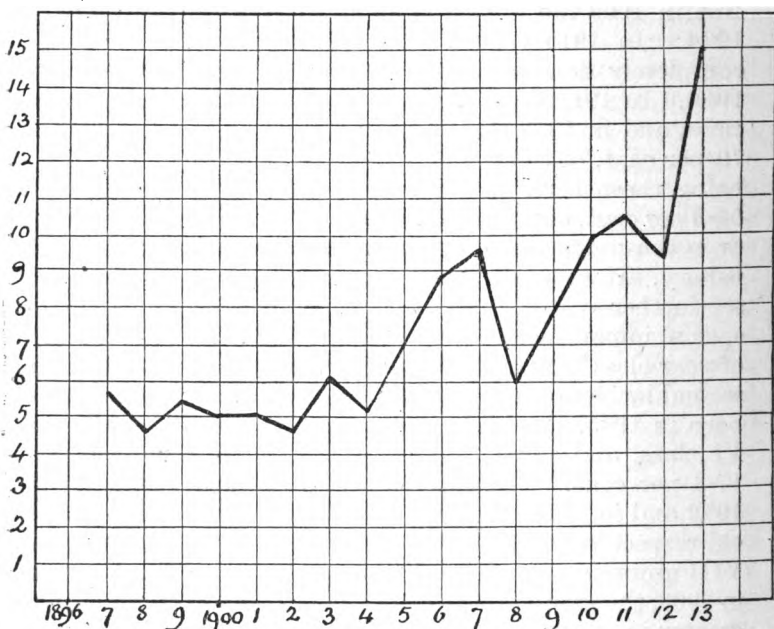


FIG. 9.—Yield of the Norwegian spring herring fisheries for the years 1896-1913. 15=1,500,000 hectolitres. 1 hectolitre=22 gallons. (After Hjort.)

sidered the Herrings born in 1904 dominated and rendered fruitful the fishing of the six years from 1909 to 1914. How much longer their influence will be felt remains to be seen.

What appears to be an exactly parallel case occurred in the North Sea Haddock fishery, and curiously enough it was again fish of the year 1904 that were exceptionally abundant. The young fish of 1904 began to show in the catches in 1905, and in 1906 they were present in extraordinary numbers (Helland-Hansen, 10, p. 33). Although the case has not been worked out in the same detail as for the Herring, the statistics show an exceptional quantity of

medium-sized Haddock in 1907, and of large Haddock from 1907 to 1910. This is just what we should expect from the gradual growth of the fish born in 1904, which were so exceptionally abundant in 1906.

For the Plaice also it has been shown that the abundance of the young brood on the nursery grounds varies greatly from year to year (Johansen, 14, Pts. III. and VI.), and there is little doubt that the same sequence of events occurs in the case of this fish, though it has not up to the present been followed in detail.

These investigations, then, seem to give us one of the keys necessary for a proper understanding of much in relation to the fluctuations of the fisheries which was previously difficult to understand. Moreover, they offer a prospect of enabling us to predict the probable course of the fishery some years ahead, for when the exceptional abundance of the young fish of any year has been discovered, we shall be able to say, from a knowledge of the growth-rate of the fish, in how many years these fish will reach marketable size and if all goes well with them give rise to an abundant fishery. Information of this kind, intelligently applied, ought to be of some use to the practical fisherman. To those whose duty it is to study the fisheries from the point of view of legislative or administrative control, it is of course of the very greatest importance.

As was explained at the beginning of this address, I have attempted to lay before you some account of one single branch of fishery research, and as I have proceeded you will no doubt have felt that a subject which at first sight seemed fairly straightforward and simple developed quite unexpected complexity and yielded in the end quite unexpected results. This is indeed only the common experience of those who break new ground or explore new territories in any branch of knowledge whatever, but in the case of marine research the difficulties are perhaps exceptionally great and the calls on the patience and perseverance of the investigator are almost unlimited. But those who have been most intimately associated with this research and have followed it in greatest detail are the most convinced of its promise of fruitful result. We must look to the growing intelligence of the larger public, grown wiser, may we hope, in the stern school of war, for that appreciation which will enable it to be continued with the means and resources which its difficulties demand.

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BRITISH AND METRIC MEASURES.

To convert millimetres to inches multiply by .039.

„ „ centimetres „ „ „ .39.

The following equivalents will be useful in reading this paper :—

$$\begin{array}{rcl} 1 \text{ mm.} & = & \frac{1}{25} \text{ inch.} \\ 3 \text{ „} & = & \frac{1}{10} \text{ „} \\ 6 \text{ „} & = & \frac{1}{4} \text{ „} \\ 13 \text{ „} & = & \frac{1}{2} \text{ „} \end{array}$$

1 cm.	=	$\frac{2}{5}$ inch.	25.4 cm.	=	10 inches.
2.5 „	=	1 „	30.5 „	=	12 „
5 „	=	2 inches.	35.6 „	=	14 „
10 „	=	4 „	40.6 „	=	16 „
15.2 „	=	6 „	50.8 „	=	20 „
20.3 „	=	8 „	100 „	=	39 „

TWENTY-NINTH REPORT OF THE COMMITTEE ON DEVONSHIRE VERBAL PROVINCIALISMS.

TWENTY-NINTH REPORT of the Committee—consisting of Mr. J. S. Amery, Mr. R. Pearse Chope, Mr. C. H. Laycock, Rev. J. F. Chanter, Rev. G. D. Melhuish, Rev. O. J. Reichel, Miss C. E. Larter, and Mrs. Rose-Troup; Mr. C. H. Laycock and Rev. O. J. Reichel being Joint Secretaries—for the purpose of noting and recording the existing use of any Verbal Provincialisms in Devonshire in either written or spoken language, not included in the lists already published in the Transactions of the Association.

Edited by CHARLES H. LAYCOCK.

(Read at Plymouth, 19th July, 1916.)

LAST year your Committee once again marked time, so to speak, by reviewing the work already accomplished, and an Index was compiled of all the words recorded up to and including the Twenty-eighth Report. In presenting their Twenty-ninth Report, your Committee are pleased to note that many fresh and interesting Contributions have come to hand since the publication of their last Report, which shows that there still remains much to be recorded.

The Rules and Regulations of the Committee were reprinted in last year's Report, Vol. XLVII, p. 94. Should any new Member not possess a copy, the Editor will be pleased to supply him with one on his application.

CONTRIBUTIONS.

Each provincialism is placed within inverted commas, and the whole contribution ends with the initials of the observer. All remarks following the initials are Editorial. The full address of each contributor is given below, and it must be understood that he or she only is responsible for the statements bearing his or her initials.

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“ADDLED=confused, muddled. A farmer was with me to-day, and as an example of how necessary it is for a man working hard and sweating to have a drink, he told me that one year, when cider was very dear, the harvesters had tea and coffee given to them instead, but that they got ‘addled as a dish’ on the temperance drinks. 10 May, 1915. G. D. W.”

This is a figurative use of the word “Addle,” which literally means to make abortive, as in the case of eggs, by allowing them to get cold during incubation.

Not long ago an old man at Moretonhampstead, speaking about the war, said: "My 'aid gets proper addled, raidin' so many ole nūsepapers."

A.-S. *Ādl*, diseased, putrid.

"AGLETS, EGLETS=haws, the fruit of the haw-thorn (*Cratægus oxyacantha*). T. J. J."

See *Aggles*, 13th Report, Vol. XXV, p. 182.

The word is really *Haglets*, though of course the "h" is dropped in the dialect unless great emphasis is laid on the word.

Haggle- or *Aggle-berries* is also commonly heard, more usually applied to the berries when picked or eaten, while *Aglets* is more commonly applied to them while hanging on the branches. And the term is often loosely applied to any bunch or pendant of blossom or fruit.

Hag, *Hag-thorn* is the older and more correct form of Haw-thorn. Lit. *Hedge-thorn*.

A.-S. *Haga*.

"APPLE-IN-AND-OUT. Name for baked or boiled flour pudding, in which slices of apple are indiscriminately mixed. C. E. L."

"BALING (rhymes with *paling*)=hatching. 'The chicks 'll be out very züne, they'm balin' a'ready.' Baling was explained as chipping the shells from inside with their little beaks. Handy-man, age 30. Bere Alston, 1915. A. C."

See *Baled*, 27th Report, Vol. XLVI, p. 80.

"BEDLIER=a person who is always confined to bed, one who is bedridden. 'Poor ole feller, he been a bedlier now 's years.' The only term in use in Devon. T. J. J."

A purely Westcountry term.

In the North of England it is "Bed-fast."

See *Bed-layer*, 8th Report, Vol. XVII, p. 87.

"BELLISING, lit. '*bellowsing*' = a tongue-banging, to drive a person away. 'Gie en a güde bellisin' if he comes ageän, an' yū won't zee no more o'n.' Newton Abbot. T. J. J."

See *Bellis*, 13th Report, Vol. XXV, p. 184; where the word is used in the more literal sense of driving away, or disturbing rabbits.

“BITTLE, noun. ‘Thaize turmets ha’ got fine bittles, but not much leave tū em.’ Used by a North Devon labourer. I also heard it said about the same turnips that they had ‘bittled purty well.’ Parracombe, 1914. J. F. C.”

See 7th Report, Vol. XVI, p. 96.

The word implies to swell out, applied to the root, so as to somewhat resemble the head of a “bittle” or “beetle,” i.e. a large wooden mallet.

“BOR, *sb.* A term of familiar address. A man, meeting a friend, will address him thus : ‘Well, bor, ’ow be ’e?’ O. J. R.”

I have heard it once only, in West Somerset.

It is an interesting word (A.-S. *Būr*, a peasant), found in the literary language only in the compound “Neighbour.”

A.-S. *Neah-būr*. Cp. lit. English *Boor*. Dutch *Boer*.

“BUNT, verb. Speaking of a newly-sown patch of ground : ‘Us ’ll stretch zome string across, an’ then the birds won’t come buntin’ there.’ Explanation : ‘Buntin’ is buryin’ theirzels in the ground, takin’ a sort o’ earth-bath like, you mid zay.’ Gardener, age 48. Bere Alston, 1915. A. C.”

Bunt means literally to strike violently against anything, especially with the head, or horns, to butt. In the above example no doubt the action of the birds suggested this.

See 11th Report, Vol. XXI, p. 88.

“CATCH HEAT=to get warm. ‘I can catch ’ate vast anuff, crackin’ stwoans.’ Labourer, aged 57. Kentisbeare, 1913. E. S. C.”

The word *heat* is pronounced *yet*, almost *yit*, by the true old Devonian. A common mode of salutation on a cold winter morning is “Mornin’, ’ow be gettin’ on? Cas’ catch yet ’s mornin’? Coald, idd’n et?”

“CORDWAINER=a shoemaker. Kentisbeare Registers down to 1840. E. S. C.”

See *Cordeuant*, 19th Report, Vol. XXXIV, p. 95.

Formerly found in the literary language.

“DIAL=one full of mischief, pranks, or play. ‘He’s a dial.’ I have heard this expression used twice lately by different speakers in reference to a boy. It was spoken good-naturedly. E. C. L.”

The word probably refers in the first instance to the

facial expression of the boy, as being full of fun and mischief, and so is transferred to his character generally.

Cp. the slang expression, "He's a reg'lar caution," and the Devonshire equivalents, "He's a proper toy," "He's a 'nointed limb," and so on.

See also under *Masterpiece*.

"DILLY=an omnibus. A market woman, seated in a railway carriage, when the train gained speed, said: 'I zim us goos vaster 'n they dü in that-there Dalish (Dawlish) dilly.' L. B. W."

The term "Dilly" is usually applied to a light wagon, and so may easily signify a small public conveyance. It is also applied to a water-cart, or a cask on wheels for carrying water or other liquids.

Probably abbrev. from the French *Diligence*.

See *Eng. Dial. Dict.* and *Halliwel*.

"DOIL=to talk incoherently.

The following amusing anecdote was told me by a lady friend:—

Scene: A cottage in a North Devon village.

Doctor, beside the bed of a suffering woman, the Rector's wife, and a neighbour (a poor woman) also being present.

Doctor: 'Now, Mrs. S., you'll be careful if she should wander?'

Neighbour (interrupting): 'Wander! (with scorn), her'll never wander.'

Doctor: 'Well, but if she does...'

Neighbour: 'Her *waan't*, I tell 'e.'

Doctor: 'Well, well, but I only say *suppose* she should wander...'

Neighbour (angrily): 'Her *waan't*, her *caan't*, her'll never wander!'

Rector's wife (persuasively): 'Mary, suppose her should doil a bit the doctor means.'

Neighbour: 'Oh, aye!'

And the matter was fully understood. C. E. L."

To "tell doil" is a phrase still fairly common, especially in North Devon, for to talk wildly, as in a delirium.

Cp. Rock's *Jim an' Nell*:—

"But there, I be a-tellin' *doil*,

Ott dith it argy, Dame, to roil;

There's noan, I zem, like he!"

St. 82.

Exm. Courtship :—

“ He wall tell *doil*.”

l. 511.

Hence the adjectives *Doily*, *doilish*, light-headed, incoherent.

See *Doily*, 16th Report, Vol. XXIX, p. 52.

I fancy *doil* is a variant of *dwale* or *dwáll*, which is also common in our dialect, with much the same meaning. See 1st Report, Vol. IX, p. 130.

“ How er dü dwallee ! ” is commonly said of a parson who preaches long, dry sermons. While the deadly nightshade (*Atropa Belladonna*) is known as *Dwale*, or *Dwale-blüth*, so named from its soporific effects. A.-S. *dwala*, stupefaction.

It must, however, be admitted that in the *Exmoor Scolding* the two words *doil* and *dwáll* are used in the same sentence, as if they were not synonymous.

“ Lock ! dest *dwallee* or tell *doil* ? ”

l. 137.

“ DOWN, as a preposition, for ‘ at.’ Maid : ‘ I left the vase down ‘ome.’ Invariably this word is used instead of ‘ at home.’ C. E. L.”

This is really the omission of the preposition, which is so common in our dialect. The sentence should read : “ I left the vase down at home,” or, as a Devonian would be more likely to say, “ down to home.” But the “ to ” is almost invariably omitted in such cases, especially when the speaker is talking quickly. A native of Moreton-hampstead said to me, of another man, “ He lives down Nüton, doan’ er ? ”

The “ down ” is really redundant, the maid might just as well have said, “ I left the vase ‘ome ” ; but we Devonians delight in redundancy of expression, we never speak of a thing as being “ over ” or “ under ” any place, but always “ up over ” and “ in under,” sometimes even “ down in under.”

“ DRUGGED=dragged. Applied to the wheel of a vehicle which is fitted with a drag or shoe-brake. ‘ Us drugg’d en comin’ down over the hill ’ means we applied the shoe-brake to one, occasionally to both, of the hind wheels. T. J. J.”

The drag or shoe-brake is always known as the *drug* or *drug-shü* in Devon.

Short "a" and short "u" are not unfrequently interchangeable in our dialect. Cp. *Scrutch* for scratch, *clum* and *clam*, *mull* and *máll* for to maul, etc.

Or it is possible that it is an instance of back-formation from *drug*, the old past tense of the verb to drag, which is still heard in the dialect. A Devonian would say, "I drug 'n all the way 'ome" for I dragged it all the way home.

"FLEETY. Flour is said to be 'fleety' after a bad harvest. It comes from sprouted wheat, lacks body and melts away into a thin paste, almost starch-like. T. J. J." Cp. *Fleet-water*, shallow water, which overflows low-lying meadows, etc., and which quickly disappears.

"FOXY=deceptive, uncertain. Applied to the weather. A woman at Moretonhampstead, age about 40, said to me: 'Tis a foxy day to-day.' She pointed out that, though it was fine and sunny at the time, there were heavy clouds over the moor, which betokened coming rain.

"A motor driver from the same parish remarked one day that the roads were 'ter'ble foxy,' implying that, though dry enough in some places, in others they were very wet and sticky. C. H. L."

Originally sly, cunning, as a fox.

"FRANKLIN-NIGHTS. My gardener always warns me that he must not put out the bedding plants or anything of a tender nature till the 'Franklin-nights' are over. And these are the nights between May 23rd and 28th, when he tells me we often have a frost.

"What is the origin of the term? M. R. D."

In Baring-Gould's *Book of the West, Devon*, p. 84, we read as follows:—

"There are three cold nights in May, not always, but often. At Crediton, and throughout the apple-growing districts in North Devon, these are called 'Francémass,' or 'St. Frankin's days.' When a frost comes then it injures the apple blossom."

The two versions of the story relative to this frost are given in *Trans. Devon. Assoc.* (1895), Vol. XXVII, p. 64; and *ibid.* (1909), Vol. XXXIX, p. 108.

"GADDICK. A term used at Hatherleigh in North Devon. Anyone who lives by his wits and is very crafty is sometimes described as 'deep,' and to emphasize the craftiness 'so deep as the Devil' is occasionally used. At Hatherleigh this sometimes became 'so deep's Gaddick.'

About 1865 a man lived in the parish of North Lew, who earned a livelihood by doing odd jobs and by his wits. He had such a reputation that instead of being termed 'so deep's Gaddick,' he became 'Th' ole Gaddick up to No'th Lew.' G. J. A."

R. P. C. writes, "A modified form of *Gaddick*, viz. *Garrick*, is quite familiar to me. See *Dialect of Hartland*, p. 14." "So deep's Garrick" is still heard fairly frequently in North Devon. The interchange of *dd* and *rr* is not unknown in the dialect; paddock is usually pronounced *parrick*.

In West Somerset, the expression is "So deep's *garlick*." G. J. A. writes: "Since hearing the form 'Garrick,' it has occurred to me that the probable solution is that a man who is deep is a man who can play a part; and who could play a part better than David Garrick? Known in his day as the greatest actor of his time, if not of all time. This may seem rather too imaginative an origin, but country-folk do carry on the old words, and are not so changeable as townspeople. Cp. the description of the pick-and-shovel labourer as a 'navigator,' instead of a navvy, by an old country woman, which shows that they sometimes speak more correctly than present-day folk."

"GADGET. I see in the Index of Devonshire Provincialisms published last year no reference to the word 'Gadget.'

"This is a fairly common term used for almost any mechanical apparatus which performs its work successfully. Used at Exmouth 1914, 1915, and 1916.

"Some hoisting gear had been erected for placing some large and heavy roof trusses in position. The first was put up easily, and the remark was, 'Well, that's a proper gadget'; applied to the lifting gear. Used by a member of the R.N.R., aged about 40.

"A portable machine was on the works for boring holes in timber. A man would want it and would call, 'Bring along the gadget.'

"The word is used a good deal by seafaring folk, and almost all of those who use it are, or have been, conversant in some degree with naval matters; by naval I mean Royal Navy rather than a fishing community.

"I had a letter a short time ago from a brother, who is in the North of England. He referred to an electric tool

I sent to him, and he said, 'Very many thanks for the *gadget*, it is appreciated by all of us.'

"I can find no reference to the term in any dictionaries or glossaries. G. J. A."

The word *Gadget* is not recorded in the *English Dialect Dictionary*. It must therefore be regarded as a valuable, and hitherto unrecorded contribution to the Devonshire Dialect Glossaries.

More light on the precise use of the term would be welcome.

Since the above was written, R. P. C. writes: "I mentioned the word *Gadget* to my brother, an engineer-captain in the Navy, and he thinks with me that the use of it is primarily among naval men, and that it is rather naval than local dialect. He thinks it is generally used to indicate any tool or contrivance, of which the speaker has forgotten, or does not know, the real name. At Exmouth there would be a lot of seafaring men, so that the word may have got into common use among landmen.

"The word is not in the *New English Dictionary*, nor can I find it in Smyth's *Sailor's Word Book*."

Again later, R. P. C. writes: "The following extract from Pemberton Billing's speech in the House of Commons, as reported in the *Times* for March 29th, supports my contention that *gadget* is not a purely local dialect word: 'He asked the House to imagine a pilot in a groggy old machine, tottering in the air over the enemy's lines, knowing he had only about 72 miles an hour in hand, nothing but *gadgets* all round him which the official experts loved to load on the machines.'

"*Gadgets* here seems to mean useless contrivances."

It seems fairly clear from the foregoing remarks that the word *gadget* is of naval origin, and must be regarded as an importation rather than a Devonshire archaism; but since it is of frequent occurrence in the county, and has not been previously recorded, it may reasonably, in accordance with our Rules, be included in this Report.

"GIVED AWAY=given way. Of a floor which had gone in, it was said 'the joices (joists) had rotted an' gived away.' T. J. J."

"GOARY. Applied to straw for thatching. 'Us wants it long an' goary.' Used by a carpenter, Black Torrington. L. H. R."

The word "goary" in our dialect implies fat, sleek. A fat-necked bullock is said to be "goary-neckéd." So when applied to straw, as in the above example, it means coarse and luxuriant in the stem.

"HAMMERED=beat very hard. Of a woman, who had beaten a child very hard, 'Er 'ammer'd en proper, sure 'nuff.' Newton Abbot. T. J. J."

"HARD TO RAIN. A Devon expression for 'it seems unwilling to rain.' Used in Newton Abbot. T. J. J."

"HEAVING=calling out to. Cyclist to pedestrian, who had failed to hear his warnings: 'I've been 'eavin' t'ee vor ever zo long, wonder I 'adn' runn'd into 'ee.' C. E. L."

An interesting word. Not previously recorded. Not in *Eng. Dial. Dict.* In the West of England, particularly in Cornwall, where pilchards are caught by the seiners, "Heeva, heeva!" is the cry uttered by the "Heever" or "Hewer," who is always on the look out, to warn the fishermen of the approach of a shoal (locally *sküle*) of pilchards. In most fishing villages, where pilchards come, there is a small stone house or hut built on a high eminence overlooking the bay, known as the Hewer's, or Huer's House. The old Huer's Hut still remains at Newquay, though pilchards no longer go there.

Cp. the literary English "Hue and cry."

O. Fr. *Huer*, "crier."

Probably of onomatopœic origin. Cp. "Hoot."

"HEDGE-HOLLAND. Used as a name for the 'water-table,' or gutter by the road-side. Ashwater.

"I have only heard this once. G. D. M."

Eng. Dial. Dict. has "Hedge-hulling," Devon, a hollow ditch for the defence of the hedge.

It is possible that "holland" may be a survival of an old plural in *en* or *n*, *hollow'n* for hollows.

"JAUNT FOR A FOX. I was one day in the hills between Holne and Scorrison, when I met a lad looking for some stray cattle. He asked me if I had seen them, and when I told him I had not and that I thought they must have gone up a certain branch lane that I had passed half a mile back, he said: 'That'll be a nice jaunt for a fox.'

"That was the first time I had heard the expression, but have heard it twice since. It is used by moorland folk to denote a long, rough trip. Ashburton, 1915. W. J. O. E."

“**LICKER**=anything exceptionally large. A child gathering blackberries, coming across a particularly large one, exclaimed, ‘Oh, yer’s a lick!’ C. E. L.”

Common. See *Lickering*, 12th Report, Vol. XXIII, p. 132.

“**MASTERPIECE**. Term used to express one who is keen about anything. ‘We’m a masterpiece vor fires.’ ‘He’s a masterpiece for learnin’.’ C. E. L.”

A very common term in Devonshire for expressing anything surprising or wonderful, that which excites admiration. I happen to possess a very large cat, weighing over 15 lbs.; a man at Moretonhampstead, on seeing it, exclaimed, “Lor! wat a masterpiece of a cat he is to be sure.”

It is the Devonshire equivalent of the slang term “Caution.” “Well, I’m bother’d, if he ain’t a proper masterpiece!”

See 13th Report, Vol. XXV, p. 197, where the word is used in a different sense from the above, but with the same primary significance.

“**MINJIES**=minnows. Heard at Tavistock. Boys go out ‘catchin’ minjies.’ They are also known as ‘Zilverzides.’ J. J. A.”

“Minnies” is the usual dialectal form of minnows.

Cp. “Borry” for borrow, “Zwally” for swallow (verb).

“**MOLLY-HOCKING**. (Pronounced *Molly-’ockin’*.) Term used by an old woman at Kentisbury, with reference to boys throwing clots of earth at girls, on an evening about Hock-tide.

“The old woman spoke of it as being a well-known custom in her young days, but unknown to younger members. J. F. C.”

Hock-day was the second Tuesday after Easter Day.

It was a day of feasting and mirth, held formerly in most parts of England to celebrate the victory of King Ethelred over the Danes.

A popular festival which commenced the fifteenth day after Easter. Hone’s *Every-day Book*.

“Molly” is a semi-slang term having reference to anything feminine, or effeminate. Cp. “Molly-coddle.”

“**PIT-Y-HOLE**=a grave. ‘Grannie’s in the pit-y-hole.’ Used by a small child at Torquay. Only the euphonic ‘y’ added to pit-hole is purely Devonian. For I find pit-hole

used as an ordinary term for the grave in one of Ann and Jane Taylor's *Hymns for Infant Minds*. A hymn under the title 'About Dying' opens thus :—

'Tell me, Mamma, if I must die
One day as little baby died,
And look so very pale, and lie
Down in the *pit-hole* by its side.' C. E. L."

It is an expression used almost exclusively by, and when speaking to, children.

See *Pit*, 11th Report, Vol. XXI, p. 98. Also 13th Report, Vol. XXV, p. 199.

Hal. has *Pit-hole*, a grave. Var. dial.

A.-S. *Pett*, a hole, pit.

"PROUD=slippery. A farmer, living at Poundsgate, was driving home from Newton market, when coming down Great Linhay Hill, a mile from Ashburton, I overtook him and passed the time of day. He replied and added, 'the road be ter'ble proud.' It was sheeted with ice at the time. I asked him what he meant, and he replied, 'slippery.' W. J. O. E."

"RATTLING=dissolute. 'He's been a proper rattlin' ole feller.' Said by a labourer's wife, aged 50, of another's unfaithful husband. Kentisbeare. E. S. C."

"Rattling" implies rollicking, wild, noisy; one who is always going off on the spree.

"RAW-REAM=raw-cream, as opposed to scald, or 'clouted' cream. T. J. J."

"RAW-REAMED BUTTER=butter made from raw cream by means of a churn, as opposed to butter made from scald cream by hand. T. J. J."

A.-S. *Ream*, *Rem*, Cream.

"SHRIMPED UP. Of a person crouched or huddled up. 'Er was all shrimp'd up like.' T. J. J."

The "p" is euphonic. The word is really *shrim'd*, often sounded *shram'd*, and means literally shrivelled up, or benumbed with cold. e.g. "I was purty nigh shrim'd or shram'd to death wi' the cold."

In the form "Shrump" it implies to shrug the shoulders. "He keep'd on shrumpin' he's shoulders."

While nearly allied to it, if not another variant of the same word, is the equally common "Serim," and "Scram,"

with much the same meanings. See Index to Provincialisms Reports, Vol. XLVII, pp. 122-3.

A.-S. *Scrimman*, to shrink, draw up, wither.

Cp. also Dan. *Skrumpe*, to shrivel up.

"SPEN='spine,' i.e. the top layer of turf on a grass field or lawn. Ashwater. G. D. M."

The pronunciation of long *i* as short *e* is becoming rare, and is principally heard in the north of Devon. It must have formerly been far commoner, as we find many instances of it in Mrs. Palmer's *Devonshire Dialogue*, Rock's *Jim an' Nell*, and "Nathan Hogg's" *Poems*, where find is written *ven'*, bind *ben'*, and so on.

For "Spine" see Index, Vol. XLVII, p. 124.

"SQUENCH-COAL=charcoal. Used by a blacksmith at Shebbear. L. H. R."

"Squench" is the common dialectal form of quench. I should have thought squench-coal implied small coal damped, in order to extinguish the flame and so keep the fire burning longer.

"STEEVY=misty. 'It be a tur'ble steevy day.' Woman at Kentisbeare, 1906. E. S. C."

"Steeve" is a common word in the dialect implying to become stiff or benumbed with cold. See 3rd Report, Vol. XI, p. 142.

The word is a dialectal form of "stiff."

Dan. *stiv*.

In the above example it probably implies that the damp mist was such as to make one feel "steved."

Or it is possible that "steevy" may here be a dialectal form of "stewy," implying a damp heat, like a vapour bath.

M.E. *stuwen*. O.F. *estuve*.

"STOGGED=almost stuck in the mud or in a bog. In general use. T. J. J."

See *Stoggy*, 22nd Report, Vol. XLI, p. 83.

"TÄFFIES=sweetmeats, 'goodies,' of any description. In general use. Children will ask for pennies 'to buy *taffies wi'*.' T. J. J."

This is of course the local pronunciation of toffee. Short "o" usually becomes short "a" in the dialect. Cp. *knat* for knot, *clat* for clot, etc.

"TRUCKLE, verb=to trundle. E.g. to truckle a hoop or wheel.

"Is this confined to the West? G. D. M."

According to the *Eng. Dial. Dict.*, the word is confined to the Southern and South-Western counties.

Children always speak of "trucklin'" marbles, or stones; it implies causing them to roll slowly.

As a noun, "Truckle" is the common word for a caster in Devon. See 24th Report, Vol. XLIII, p. 92.

The word is probably a diminutive of "Truck," lit. a small wheel, here used to signify a low carriage for conveying goods, and finally a railway wagon.

Greek *trochos*, a wheel.

"VOSS-PLACE=a rough bridge over a ditch, made usually with logs. G. D. M."

"Voss," i.e. "Foss" or "Fosse," usually implies a trench or ditch itself.

Lat. *fossa*. Fr. *fosse*.

"WAYS, in plural, for way. 'Tis a long ways to go.' 'Any-ways, I shall try vor it.' C. E. L."

Very common. "I'll goo a li'l ways 'ome 'long wi' 'ee" =I'll see you home a little way.

"YARKER=a sharp, quick-witted animal. 'He's a proper yarker.' Used by a native of Newton Abbot. T. J. J."

This is a noun formed from the adjective *Yark*.

See Index, Vol. XLVII, p. 130.

SAYINGS :—

"'She'll strive with you to the deepest.' Of a girl given to answering her mother back. Used by a woman of middle age at Newton Abbot. T. J. J."

"'She keeps up her age'; a phrase frequently used in reference to anyone's being in reality older than appears. C. E. L."

"'You've got the key of the kitchen on you.' Said to anyone who has a smut on hand or face. C. E. L."

"'They clothes was washed in the fryin'-pan an' dried on the girdiron.' To denote that they had been washed in too little water and looked a bad colour. It seems the regular phrase for indicating poor washing. C. E. L."

"Odd effect of the use of masculine gender. 'You'll vind he'll be güde tü 'ee.' Said not of a prospective husband but of a cookery book which the speaker was recommending someone to buy. C. E. L."



Photo, R. H. Worth.
RE-ERECTING BRISWORTHY CIRCLE.



Photo, Rev. H. H. Breton.
BRISWORTHY CIRCLE AFTER RESTORATION.
VIEW—LOOKING N.W.

BARROW REPORT.—*To face page 99.*

THIRTY-FIFTH REPORT OF THE BARROW COMMITTEE.

THIRTY-FIFTH REPORT of the Committee—consisting of the Rev. S. Baring-Gould, Mr. R. Burnard, the Rev. J. F. Chanter and Mr. R. Hansford Worth (Secretary)—appointed to collect and record facts relating to Barrows in Devonshire, and to take steps, where possible, for their investigation.

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Edited by R. HANSFORD WORTH, Secretary of the Committee.

(Read at Plymouth, 19th July, 1916.)

BRISWORTHY STONE CIRCLE.

IN the Twenty-ninth Report (1910) reference is made to a stone circle on Ringmoor and to a cairn in its immediate neighbourhood.

The stone circles of Dartmoor, other than hut-circles, are very commonly associated with sepulchral remains. In some instances the circles actually enclose barrows, as on Stallmoor at the southern end of the long stone row in the Erme valley. Instances have been found where, although no barrow lay within the circle, yet on excavation its area yielded every evidence of large fires having been lit therein, in such cases barrows and cairns were associated with the circles. At Brisworthy Circle on Ringmoor the only result of the excavation, which was not very thorough, was the discovery of a very trifling amount of charcoal and one rough flint flake; but there is a cairn at 313 feet N. 77° E. from the circle, and this cairn covered what was evidently an interment after cremation.

Brisworthy Circle was carefully restored in the year 1909, the Rev. H. H. Breton, of Sheepstor, being the initiator of the restoration, and the Rev. S. Baring-Gould, Mr. R. Burnard, and the Secretary of your Committee being present at various times while the work was in progress.

Your Committee's Secretary made a survey of the circle

before the work of restoration had been commenced, and this survey is now published. If it be argued the matter is somewhat outside the province of our reports, the association of stone circle and barrow must be the reply, and the especial fitness of the record in the present year, when we hope on our long excursion to visit this antiquity. Nor should original surveys of restored monuments be left too long in private hands, the danger of their irreplaceable loss is too great.

On the plan herewith, the dotted circle has a diameter of eighty feet, and it will be seen that it just touches the three stones on the west and the one stone on the east that were still standing (standing stones are indicated by hatching). It would appear that the internal diameter of the circle as originally constructed was eighty feet. The standing stones were somewhat massive, and the highest (on the east) stood 3 ft. 8 ins. above ground.

Of fallen stones, undoubted members of the circle, there were eighteen, while the positions of two others were indicated by "triggers" and of one more by a pit.

There is a stone fence to the south of the circle, and the southern half has been robbed of nearly all its members, a fact which is something more than a coincidence; one stone on this southern side had been cut in two and a part only taken away.

Judging by the most perfect portions of the circumference the stones were originally six feet apart from centre to centre, and accordingly there would have been about forty-two before the monument was robbed. Twenty-two are now left. These have been carefully re-erected; most were put up by hand, but one required the use of sheer-legs. By the courtesy of the Rev. H. H. Breton a block showing this pillar in course of re-erection is here inserted.

On the plan, such portions of the stones as were buried beneath the turf are indicated by dotted lines.

R. HANSFORD WORTH.

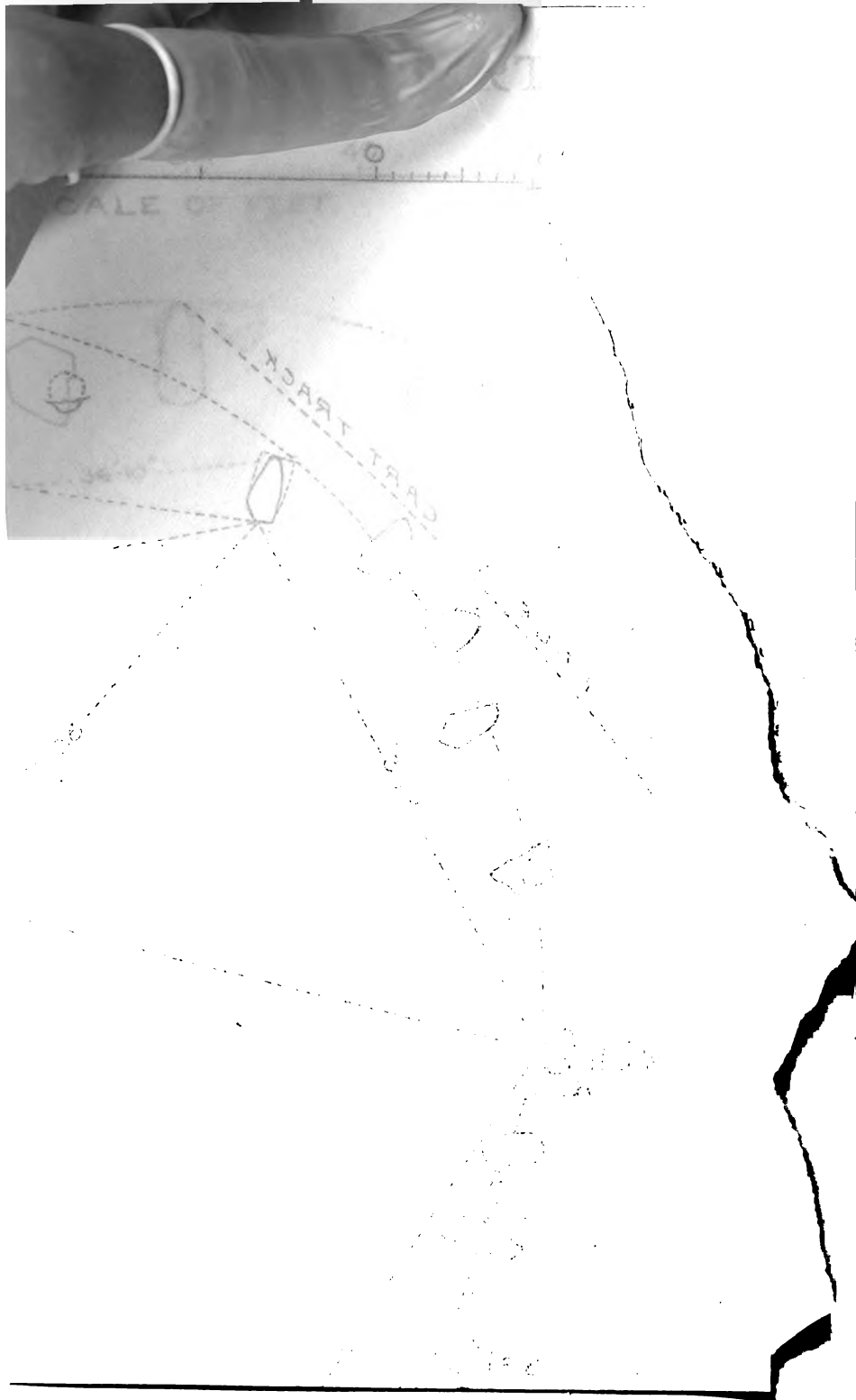
CIRCLE

60

70

Trigger

3'-8" h
α.



SEVENTH REPORT OF THE COMMITTEE ON CHURCH PLATE.

SEVENTH REPORT of the Committee—consisting of Mr. Maxwell Adams, Mr. J. S. Amery, Mr. T. Cann Hughes, Sir Roper Lethbridge, Rev. O. J. Reichel, Mr. A. J. V. Radford, Mr. G. E. Windeatt, Mr. Harbottle Reed, and the Rev. J. F. Chanter (Hon. Secretary).

Edited by REV. J. F. CHANTER, M.A., F.S.A.

(Read at Plymouth, 19th July, 1916.)

DURING the past year the Rev. J. F. Chanter has visited and inspected the Church Plate in all the parishes of the Rural Deaneries of Holsworthy and Torrington, which completes the work of the Committee for the whole of the Archdeaconry of Barnstaple, and as the plate of one or two parishes mentioned in this report has been mixed up with that of some parishes in the county of Devon that lie in Trigg Major Deanery, an account of these is added, for which we are indebted to Rev. Canon Mills, of S. Stephen in Brannell.

THE RURAL DEANERY OF HOLSWORTHY.

Holsworthy Rural Deanery, consisting of twenty-one parishes, two of which, Cookbury and Pancrasweek, are chapelries, is entirely rural, the only parish that aspires to being called a town is Holsworthy itself. Many of the churches are situated in most inaccessible and remote spots, and it was only by the kind assistance and help of the rural dean, the Rev. E. A. Donaldson, rector of Pyworthy, who made all arrangements and accompanied me to every parish, that I was enabled to visit every one and personally inspect all the plate. I had hoped that the remoter parishes might have retained some of their pre-Reformation vessels,

but they produced nothing older than the Elizabethan period, in which they were fairly rich, though in three there was nothing older than the nineteenth century. At Thornbury there is now only a chalice of 1883 and a paten of 1888, and inquiry could elicit nothing as to what had become of other pieces I saw here forty years ago. At Milton Damarell I was informed that a pre-Reformation chalice and paten had disappeared during the last vacancy, and that all attempts to recover them had been in vain. On the other hand, Luffincot and Tetcott possess a sweetmeat dish and a flagon that appear to rightly belong to Boyton, in the Diocese of Truro—and there is believed to be a piece belonging to Luffincot at Boyton. So the need for an official inventory of the Church plate of the county becomes more and more apparent, mere returns being useless and misleading.

Ten Elizabethan cups were noted, all of Devonshire make. Six by John Jones of Exeter, at Clawton, Cookbury, Halwell, Hollacombe, Milton Damarell, and Pyworthy; two by John Cotton of Barnstaple, at Bulkworthy and East Putford; one by Thomas Matthew of Barnstaple at Sutcombe, and one probably by Henry Hardwick of Exeter at Holsworthy. At Ashwater there is a cup in the Elizabethan style by I.L. of Exeter, which might be dated as *circ.* 1630, and at Luffincot a baluster stem cup of 1635 by a London maker. At West Putford the chalice is a curious wine cup of the restoration period. Black Torrington and Bradford have eighteenth-century cups by Exeter makers—the former the work of John Burdon, the first chalice by this maker I have noticed. Most of these cups have their covers, many of which are still the only patens the parishes possess, but in several a second paten was added in the eighteenth century. Apart from these the oldest piece used as a paten is at West Putford, where there is an interesting sweetmeat dish or taster of the latter part of the seventeenth century. It is curious that at Merton in Torrington Deanery there are also a wine cup used as chalice, and a taster used as a paten, which are almost replicas of those at West Putford and by the same maker—as they both bear an hitherto unrecorded mark, the letters I.D. conjoined.

All the parishes have silver patens except Bulkworthy, where there is a small plated piece replacing the recently lost chalice cover, and Pancrasweek, where there is nothing

but a brass scale pan. The oldest, outside chalice covers, is the Sutcombe paten of 1702.

Flagons are found in twelve parishes. Sutcombe has four, two silver and two pewter; Pyworthy three, one of which is a very interesting low flagon of foreign stone ware, mounted with silver straps and handle of English work. It is of late Elizabethan period or early Jacobean, but was only presented to the church in the eighteenth century. A replica in black wedgwood has been recently added.

Silver alms dishes are only found in six parishes, the oldest being a piece presented by Henry Rolle to Abbots Bickington in 1735, but there are also several of pewter and brass. At Halwell a broken pewter bleeding bowl serves the purpose.

Amongst the miscellaneous articles are a breads box and a pyx, both modern.

Domestic plate is very sparsely represented, there being only the West Putford cup and taster, the tankard at Pyworthy, and the taster at Luffincot, all of which have been previously noticed.

Eight parishes retain some of their pewter vessels, Clawton and Sutcombe having each pairs of tankards, and single ones at Black Torrington, Halwell, and Pyworthy, and at the latter place there is a curious plate on three-clawed legs with armorial bearings.

Armorialia are found at Abbots Bickington, Cookbury, Holsworthy, Pyworthy, Sutcombe, and Tetcott.

All the parishes were inspected in June, 1915. I propose in future to give the date, as in many parishes which are mentioned in the earlier reports I find that plate has been added since the reports were printed.

PARRACOMBE, Jan., 1916.

J. F. CHANTER.

ABBOTS BICKINGTON.

The plate consists of a Georgian set (date, 1734), given by Henry Rolle, Esq.

Chalice.—Georgian type, $7\frac{1}{4}$ in. high; bowl $3\frac{1}{2}$ in. diameter, $3\frac{1}{2}$ in. deep, stem with annulet for knop; foot $3\frac{1}{8}$ in. diameter.

Marks: London hall-marks for 1734; maker, EV (Edward Vincent).

Inscription: "Deo et Sanctae Ecclesiae Henricus Rolle de Stevenstone et Bickington Abbots, D.D.D. 1735."

Paten.—Plain on stand 5 in. diameter, $1\frac{3}{8}$ in. high.

Marks and inscription : as on chalice.

Flagon.—Tankard with domed lid $10\frac{3}{4}$ in. high ; diameter at lid $3\frac{1}{2}$ in., at base 8 in.

Marks and inscription : as on chalice.

Alms Dish.—Plain plate. $9\frac{5}{8}$ in. diameter.

Marks and inscription : as on chalice, and also Arms. Or on a bar dancette, between three billets az. charged with as many lions rampant of the first, three bezants (Rolle).

Crest : An arm couped holding a flint.

Motto : " Nec rege sed utroque."

ASHWATER.

Chalice.—An interesting piece of late Jacobean or early Caroline date, approximating, as many Westcountry cups of that period do, to the Elizabethan style, and with the distinctive Elizabethan strapwork and arabesque ornamentation, with cover complete, $7\frac{3}{4}$ in. high to rim, 9 in. with cover. Bowl is bell-shaped, with flat bottom, $3\frac{1}{8}$ in. diameter, $4\frac{1}{2}$ in. deep, with band of interlacing strapwork and arabesque foliage 1 in. wide round the centre, stem circular, with small knob ; has egg, tongue, and saltire ornamentation at top and bottom ; foot $3\frac{1}{2}$ in. diameter, with egg and tongue ornamentation. (See illustration.)

Marks : (i.) IL in a shield indented at top ; (ii.) Exeter town mark, X crowned, the shield conforming to shape of X and crown ; (iii.) and (iv.) the same marks repeated. This mark is found on spoons of *circ.* 1630–40.

Cover with slight ornamentation, $4\frac{1}{8}$ diameter, $1\frac{5}{8}$ in. high ; marks as on cup.

Patens.—A. Cover to chalice.

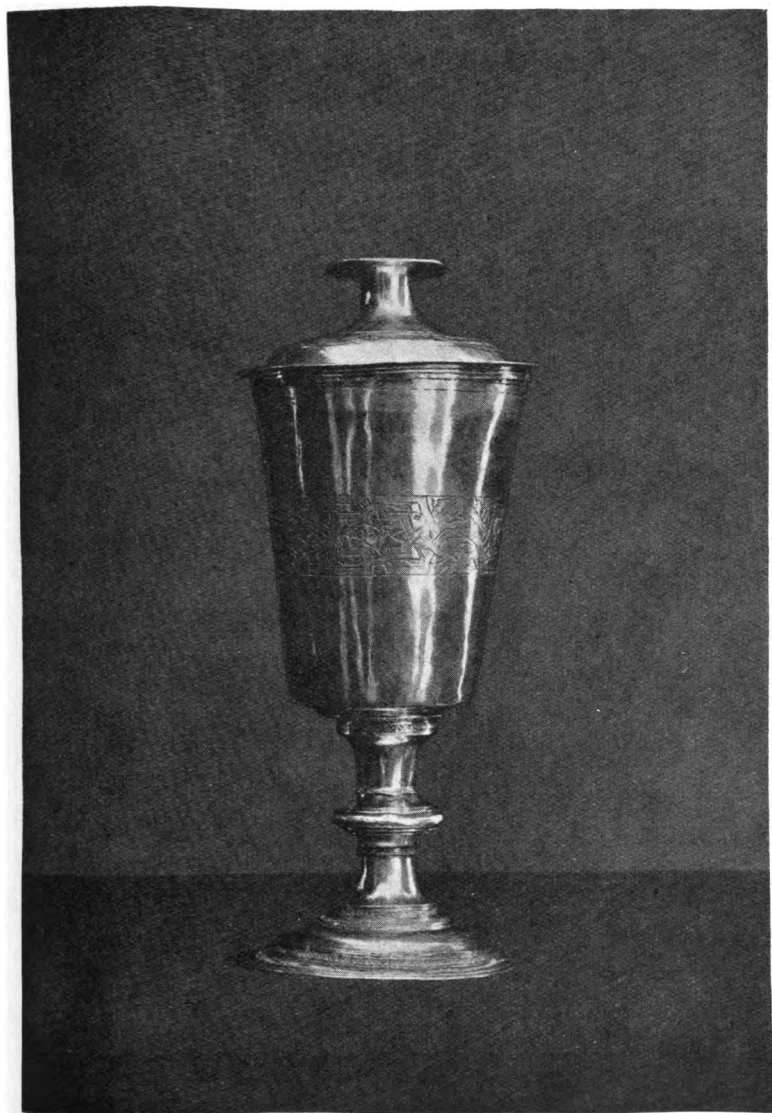
B. Plain, on stand. $7\frac{7}{8}$ in. diameter, $2\frac{1}{2}$ in. high ; plated.

Flagons.—A. Pewter tankard. 14 in. high, that has been electro-plated.

B. A pair of cruets, silver and glass.

BLACK TORRINGTON.

Here is a set of vessels in the modern mediæval style of the date 1860, and we owe our thanks to the donor, Holland Coham, Esq., that the former Georgian set of Exeter work was preserved and renovated instead of being disposed of as was the case in so many other parishes.



CHALICE. ASHWATER.
BY I. L., EXETER. CIRC. A.D. 1630.

CHURCH PLATE REPORT.—*To face page 104.*

Chalices.—A. Georgian style. $7\frac{5}{8}$ in. high ; bowl $3\frac{5}{8}$ in. diameter, $4\frac{3}{8}$ in. deep, stem with small knop ; foot $3\frac{7}{8}$ in. diameter.

Marks : **IB**, crown over (John Burdon or John Babbage), and Exeter hall-marks for 1740.

Inscription : "This chalice and its appendant the paten has been renovated at the wish and expense of Holland Coham of Coham, Black Torrington."

B. Modern mediæval style. $7\frac{1}{4}$ in. high ; bowl, tazza shape, $4\frac{7}{8}$ in. diameter, $2\frac{1}{4}$ in. deep, stem hexagonal, with large boss of six lozenges ; foot six-lobed, $4\frac{1}{2}$ in. diameter, with sacred monogram.

Marks : **MH & Co.** (Martin Hall & Co.), and Sheffield hall-marks for 1860.

Patens.—A. Forms cover to chalice A, plain on stand, $4\frac{3}{8}$ in. diameter, $1\frac{1}{4}$ in. high, foot $1\frac{7}{8}$ in. diameter.

Marks : as on chalice A.

B. Mediæval style. $6\frac{5}{8}$ in. diameter, with hexagonal depression, in which is Agnus Dei, on rim in Lombardic lettering : "O Lamb of God that taketh away the sins of the world."

Marks : as on chalice B.

Inscription : "This communion service, consisting of the chalice, flagon, paten, and plate, is given to Black Torrington Church by Holland Coham of Coham, situate in this parish."

Flagons.—A. Modern mediæval style. $10\frac{1}{2}$ in. high ; flat lid ; $1\frac{1}{4}$ in. diameter at lid, $4\frac{1}{2}$ in. diameter at foot.

Marks : as on chalice B.

Inscription : Round belly, engraved, and on a border "Glory to God on high."

B. A pewter tankard, with domed lid, $13\frac{1}{2}$ in. high, $11\frac{1}{4}$ to lid.

Inscription : "John Standlake, Churchwarden, 1783."

Alms Dish.—On stand. $7\frac{1}{2}$ in. diameter, $3\frac{5}{8}$ in. high, with six-lobed centre. On rim engraved : "Jesus said If ye love Me keep My commandments."

Marks : as on chalice B.

BRADFORD.

Chalice.—Georgian style. $7\frac{3}{4}$ in. high ; bowl, with slight lip, $3\frac{1}{2}$ in. diameter, 4 in. deep ; stem, with ring for knop ; foot, $3\frac{1}{4}$ in. diameter.

Marks:  I, crown over (John Elston), and Exeter marks for 1716.

Patens.—A. Plain on stand. $5\frac{3}{4}$ in. diameter, $1\frac{3}{4}$ in. high.

Marks: as on chalice.

B. An electro-plated plate. $3\frac{1}{4}$ in. diameter, cross on rim.

Flagon.—Modern mediæval style. 10 in. high, 8 in. to lid, $2\frac{1}{4}$ in. diameter at lid, $3\frac{1}{4}$ in. at foot.

Marks: D.W, J W, and London hall-marks for 1890. Engraved on $\frac{3}{4}$ in. band round belly: "To the glory of God," with sacred monogram. Inscription: "In loving memory of Joseph Thomas English, born May, 1809, died May, 1892, by his wife Rachel Ann English."

BRADWORTHY.

Chalice.—Georgian style. $6\frac{7}{8}$ in. high; bowl, ovate shape, $3\frac{3}{8}$ in. diameter, $3\frac{3}{4}$ in. deep; foot with sacred monogram, $3\frac{3}{8}$ in. diameter.

Marks: J E (John Emes) and London hall-marks for 1803.

Inscription: "Bradworthy, 1803."

Paten.—Plain plate. 7 in. diameter.

Marks and inscription: as on chalice.

Alms Dish.—Plain plate. 9 in. diameter.

Marks and inscription: as on chalice.

Flagon.—Domed lid tankard with spout. $10\frac{1}{2}$ in. high.

Marks and inscription: as on chalice.

BRIDGERULE.

Chalices.—A. Modern mediæval style. $7\frac{1}{4}$ in. high; bowl, hemispherical, $3\frac{1}{2}$ in. diameter, $2\frac{1}{2}$ in. deep; stem hexagonal, with boss of six quatrefoils; foot six-lobed, with six rays, $4\frac{1}{2}$ in. diameter.

Marks: I E and London hall-marks for 1868.

B. Modern mediæval style. $8\frac{1}{4}$ in. high; bowl, $3\frac{1}{2}$ in. diameter, 3 in. deep; stem hexagonal, circular boss with six lozenges, on which are six cherubs; foot circular.

Marks: H E and London hall-marks for 1914.

Patens.—A. Silver-gilt plate with hexagonal depression in centre of which is the Agnus Dei. On rim, engraved: "Agnus Dei qui tollis peccata mundi .

Marks : **I F** and London hall-marks for 1872.

B. Plain on foot. $4\frac{1}{2}$ in. diameter, 1 in. high.

Marks : **H L** and London hall-marks for 1912.

Alms Dish.—Plain plate. $7\frac{1}{2}$ in. diameter.

Marks : **J H** and London hall-marks for 1876.

Pyx.— $2\frac{1}{2}$ in. high, with London hall-marks for 1908.

Cruets.—Small pair, silver and glass.

BULKWORTHY.

Chalice.—Elizabethan, similar style to Stoke Rivers chalice (see illustration, 1st Report, *T. D. A.*, Vol. XXXVII), but wanting its cover. $7\frac{1}{2}$ in. high; bowl conical, $4\frac{1}{4}$ in. diameter, $4\frac{3}{8}$ in. deep, with band of hit-and-miss work $\frac{3}{4}$ in. wide half an inch below the brim; stem consists of two spools, the junction of which forms a knop; foot circular, $4\frac{1}{4}$ in. diameter, with two bands of hit-and-miss work, each $\frac{1}{2}$ in. wide.

Marks : (i.) **I**; (ii.) **CoToN** (John Cotton of Barnstaple, goldsmith, 1568–1601).

Paten.—Plain electro-plated plate. $5\frac{1}{2}$ in. diameter.

Flagon.—Modern mediæval style. 11 in. high; plated.

Alms Dish.—A. Plain. 9 in. diameter; electro-plate.

B. A pewter plate. $8\frac{1}{2}$ in. diameter.

CLAWTON.

Chalice.—Elizabethan of Exeter type with its cover complete. $7\frac{3}{8}$ in. high; bowl, with usual Exeter lip, $3\frac{7}{8}$ in. diameter, $4\frac{1}{4}$ in. deep, with band of strapwork and arabesque ornamentation $\frac{3}{4}$ in. wide round centre; stem with small knop and egg-and-tongue ornamentation at top and base; foot circular, $3\frac{3}{4}$ in. diameter, with egg-and-tongue ornamentation.

Marks : (i.) **A**; (ii.) **IONS**; (iii.) **X** crowned. The date is 1575.

Cover : $3\frac{7}{8}$ in. diameter, 1 in. high; perfectly plain; no marks. It has been a good deal repaired, and some portions are new.

Paten.—Chalice cover, see above.

Flagons.—A pair of pewter flat lid tankards. $9\frac{1}{4}$ in. high.

COOKBURY.

Chalice.—Elizabethan, of Exeter type, without cover, $6\frac{1}{2}$ in. high; bowl with Exeter lip, conical, $3\frac{3}{4}$ in. diameter, $3\frac{3}{4}$ in. deep, with band of strapwork and arabesque ornamentation $\frac{5}{8}$ in. broad round centre; stem, with small knop, has egg and tongue ornamentation at base; foot, 3 in. diameter, with same decoration.

Marks: (i.) I; (ii.) **IONS**; (iii.) Exeter town mark.

Paten.—Plain plate. $7\frac{1}{8}$ in. diameter.

Marks: G S (George Seatoun) and London hall-marks for 1770.

Inscription: "Capella de Cookbury D D Gualterus Elford. Rector."

Flagon.—Domed lid tankard. 13 in. high, $10\frac{7}{8}$ in. to brim, $3\frac{7}{8}$ in. diameter at brim, $6\frac{1}{8}$ in. at foot.

Marks: **C W** (Charles Wright) and London hall-marks for 1777.

Inscription: "Gualt Elford ob. 28 Oct 1777 æt 79 Hoc poculum in usum sacelli legato, Cookbury Devon."

Arms: Arg. a lion rampant; crest, a demi-lion crowned. Weight, 44 oz. 11 dwt.

HALWELL.

Chalice.—Elizabethan. A very plain example, without the marked lip that characterizes so much of the work of John Jones. $6\frac{1}{4}$ in. high; bowl, $3\frac{5}{8}$ in. diameter, $3\frac{7}{8}$ in. deep, with narrow band of strapwork and arabesque foliation $\frac{5}{8}$ in. diameter in centre; stem, with small knop and egg-and-tongue decoration at top and base; foot, $3\frac{5}{8}$ in. diameter.

Marks: (i.) B; (ii.) **X** crowned; (iii.) **IONS**.

Inscription: "S.S. Peter and James Halwell, A.D. 1873," renovated.

Cover: has been much repaired; a new base was added *circ.* 1701, which bears mark **S L** (Daniel Slade of Exeter), button has the date 1576. $3\frac{3}{4}$ in. diameter, 1 in. high.

Paten.—Chalice cover, see above.

Flagon.—Modern mediæval style. 9 in. high, $7\frac{3}{8}$ in. to lid, $1\frac{3}{4}$ in. diameter at lid, $3\frac{1}{4}$ in. at foot.

Marks: **TC**
EC and London hall-marks for 1871.

Inscription: "S.S. Peter and James Halwell, 1873."

Pewter vessels.

Paten.—On stand. $8\frac{1}{2}$ in. diameter, 2 in. high, with octagonal foot.

Inscription : " Halwill, S K G R."

Flagon.—Flat lid tankard. $7\frac{1}{2}$ in. high.

Inscription : " Hal-Will S. R."

Alms Dish.—A bleeding bowl. $4\frac{1}{8}$ in. diameter, $1\frac{1}{8}$ in. high. Handle has been lately broken off and is now missing.

HOLLACOMBE.

Chalice.—A small Elizabethan cup, Exeter style, $5\frac{1}{4}$ in. high ; bowl, $3\frac{1}{4}$ in. diameter, $3\frac{1}{8}$ in. deep, with narrow band of strapwork and arabesque foliation $\frac{5}{8}$ in. wide ; stem with small knob ; foot, $3\frac{1}{4}$ in. diameter with tongue ornamentation.

Marks : (i.) IONS ; (ii.) X crowned (J. Jones of Exeter). It may be dated as 1573-4.

Cover : quite plain, except Tudor rose on button. $3\frac{3}{8}$ in. diameter, $1\frac{1}{4}$ in. high.

Paten.—Chalice cover, see above.

Alms Bowl.—Pewter.

HOLSWORTHY.

Chalice.—Elizabethan, with cover parcel-gilt, same style as that at Parkham. $7\frac{3}{4}$ in. high ; bowl conical, $4\frac{1}{4}$ in. diameter, $3\frac{3}{4}$ in. deep, with band of strapwork and arabesque foliation $\frac{3}{4}$ in. wide, $\frac{3}{4}$ of an inch from brim ; stem, with rounded knob, ornamented with hit-and-miss work ; foot, circular, $4\frac{1}{4}$ in. diameter, with band of strapwork and arabesques.

Marks : (i.) H H conjoined with egg under, in circle, perhaps Henry Hardwick of Exeter ; (ii.) and (iii.) the same repeated.

Cover.— $4\frac{1}{4}$ in. diameter, $\frac{1}{2}$ in. high. Has date 1576 on the button, but no marks.

Patens.—A. Chalice cover, see above.

B. On stand. 9 in. diameter with gadroon border, 2 in. high ; foot, $3\frac{1}{2}$ in. diameter, with cable border.

Marks : I Y (James Young) and London hall-marks for 1778.

Inscription : " The gift of Roger Kingdon, gent., 1778."

Arms : A chevron sable between three choughs. Crest, a knot.

Flagon.—A domed lid tankard, 11 in. high, of Sheffield plate.

Alms Dish.—Brass. 15½ in. diameter ; a fine plate.

LUFFINCOT.

Chalice.—A small baluster stem cup. 5¾ in. high ; bowl conical, 3¼ in. diameter, 2½ in. deep ; foot, 2⅞ in. diameter.

Marks : D G with anchor between, and London hall-marks for 1635.

Patens.—A. A small plate, 3½ in. diameter.

Marks : T T & Co., and Birmingham hall-marks for 1884.

B. Pewter on stand. 9½ in. diameter, 2½ in. high.

Alms Dish.—A sweetmeat dish or taster. 7½ in. diameter, ⅝ in. high.

Marks : N B and London hall-marks for 1663.

Inscription : " O B A P 1665." Pricked.

I have since been informed that this dish really belongs to Boyton, in the diocese of Truro, and that a flagon belonging to Luffincot is at Boyton.

MILTON DAMARELL.

Here there is said to have been a mediæval chalice and paten, which were carried away and sold with many other things in 1897. Attempts were made to recover the lost property, but without avail, though a lawsuit took place. At present all that is in existence is a chalice with its cover and a paten.

Chalice.—Elizabethan, a plain example of John Jones work. 6¼ in. high ; bowl conical, 3½ in. diameter, 3¾ in. deep, with narrow band of strapwork and arabesques ½ in. wide ; foot, 3 in. diameter, with egg-and-tongue ornamentation.

Marks : (i.) I ; (ii.) IONS ; (iii.) Exeter town mark.

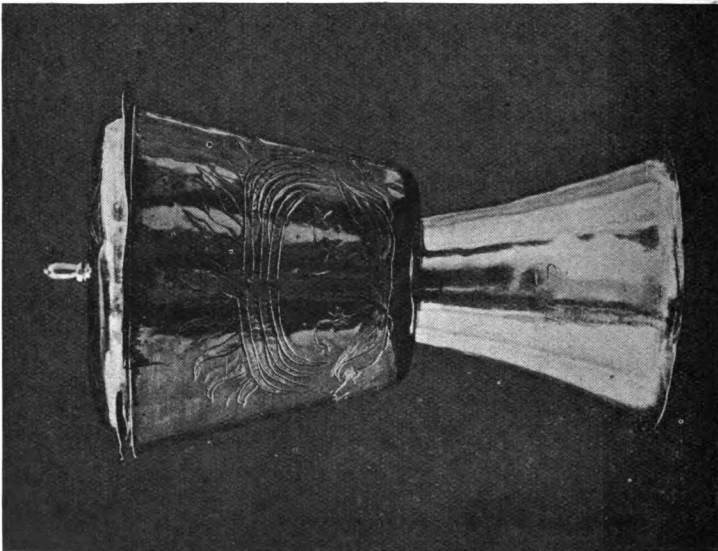
Cover.—Plain domed shape. 3¾ in. diameter, 1½ in. high. On button is the date 1577.

Paten.—A. Cover to chalice, see above.

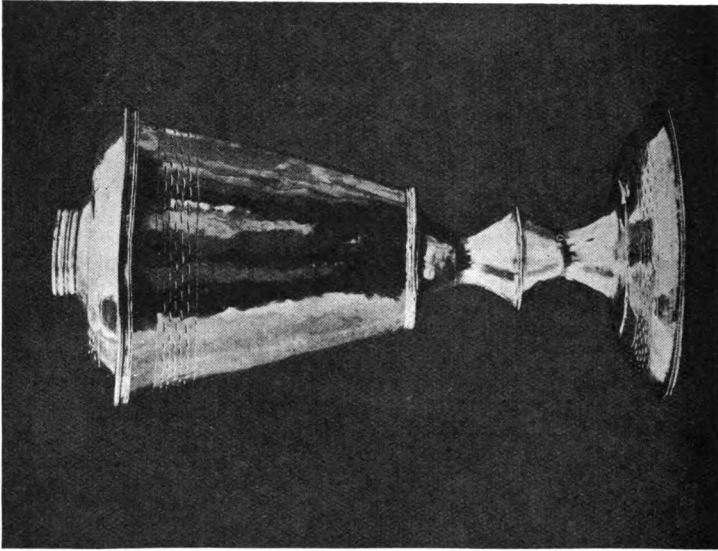
B. On stand with cable border. 9 in. diameter, 2½ in. high.

Marks : maker, C O, crown over (John Cory), and London hall-marks for 1705.

Inscription : " Milton Dameral cum Capella de Cookbury Devon D.D. Gual Elford Rector."



WINE CUP. WEST PUTFORD.
RESTORATION PERIOD.



CHALICE. EAST PUTFORD.
BY J. COTTON, BARNSTAPLE.
CIRC. A.D. 1576.

PANCRASWEEK.

Pancrasweek is a chapelry of Bradworthy, and its plate consists of a chalice only. For a paten a small brass disc is in use, and for an alms bowl a pewter bleeding bowl.

Chalice.—Georgian style. $8\frac{3}{4}$ in. high; bowl, 4 in. diameter, $4\frac{3}{4}$ in. deep; stem with ring for knop; foot, $3\frac{7}{8}$ in. diameter.

Marks: maker, *S. W* (Samuel Welles) and London hall-marks for 1750.

Inscription: "Pancrafweek. 1750."

PUTFORD EAST.

Chalice.—Elizabethan, a rude example of the Barnstaple type with its cover. $6\frac{1}{8}$ in. high; bowl conical, $3\frac{3}{4}$ in. diameter, $3\frac{7}{8}$ in. deep, with band of hit-and-miss work $\frac{1}{2}$ in. wide near the brim; stem consists of two spools as Stoke Rivers cup (see illustration, 1st Report); foot ornamented with billets and band of hit-and-miss work.

Marks: (i.) I; (ii.) **CoToN** (John Cotton of Barnstaple, 1568–1601). (See illustration.)

Paten is chalice cover. Has no button. $3\frac{7}{8}$ in. diameter, $\frac{7}{8}$ in. high, with band of hit-and-miss work $\frac{1}{4}$ in. wide.

No marks.

Alms Dish.—Plain plate. $9\frac{1}{4}$ in. diameter.

Marks: maker, *TC* in monogram and London hall-marks for 1678.

Inscription: "I T I B, 1680." Pricked.

PUTFORD WEST.

Chalice.—A secular wine cup of the late sixteenth-century period with cover 6 in. high; bowl is cylindrical, spreading at the lip, $4\frac{1}{8}$ in. diameter, $3\frac{3}{8}$ in. deep. It is ornamented with punched work in the shape of a tree with eight long, narrow leaves. The bowl rests on a stand hammered out of one piece of silver with no foot beyond the spread of the stem to a trumpet shape. The two parts are joined together by a bolt and screw. The cover is domed shape with knop on the top and is $4\frac{1}{2}$ in. diameter.

No marks. (See illustration.)

Inscription: **W P**.

A similar cup at Merton is dated 1688, and has for mark **I D** conjoined.

Paten.—A taster or sweetmeat dish. $5\frac{1}{2}$ in. diameter, $1\frac{1}{2}$ in. high, on low, trumpet-shaped stand, and joined to it by bolt and screw.

Marks : (i.) I D conjoined ; (ii.) and (iii.) same.

Flagon.—Pewter domed lid tankard. 14 in. high.

Alms Bowl.—Pewter bowl. 10 in. diameter, $1\frac{1}{4}$ in. high.

Inscription : "W P, 1669."

Illustrations of similar pieces to chalice and paten are given in Jackson's *Illustrated English Plate*, figs. 242, 92.

PYWORTHY.

Chalice.—Elizabethan, with cover of the Exeter type. $7\frac{1}{2}$ in. high ; bowl conical, with marked lip, $3\frac{3}{4}$ in. diameter, $4\frac{1}{8}$ in. deep, with band of strapwork and arabesque foliation $\frac{5}{8}$ in. wide round centre ; stem has a flange for knop ; foot, $3\frac{3}{4}$ in. diameter with egg-and-tongue ornamentation.

Marks : (i.) I ; (ii.) IONS ; (iii.) X crowned ; (iv.) B.

The marks of J. Jones of Exeter and date of 1576

Paten Cover.—Has been a great deal repaired and renewed. 4 in. diameter, 1 in. high ; the band of strapwork and arabesque is modern work ; button has the Tudor rose.

Marks : as on chalice.

Flagons.—A. A valuable and interesting low flagon of stone ware mounted with silver straps, massive handle, and lid. $6\frac{1}{2}$ in. high, $3\frac{3}{4}$ in. diameter at foot and lid ; the bands are ornamented with arabesque foliation in the Elizabethan style. (See illustration.)

Mark on lid and top strap : R in shield.

Inscription : "The gift of Mrs. Joanna Mapowder. to the Church of Pyworthy for the use of the Lords Table."

Arms : Barry of ten gules and arg. on a chief of the second a greyhound courant sable.

(Mrs. Joanna Mapowder bur. 14 Feb., 1754. Pyworthy Register.)

B. A modern replica of tankard A in black wedgwood.

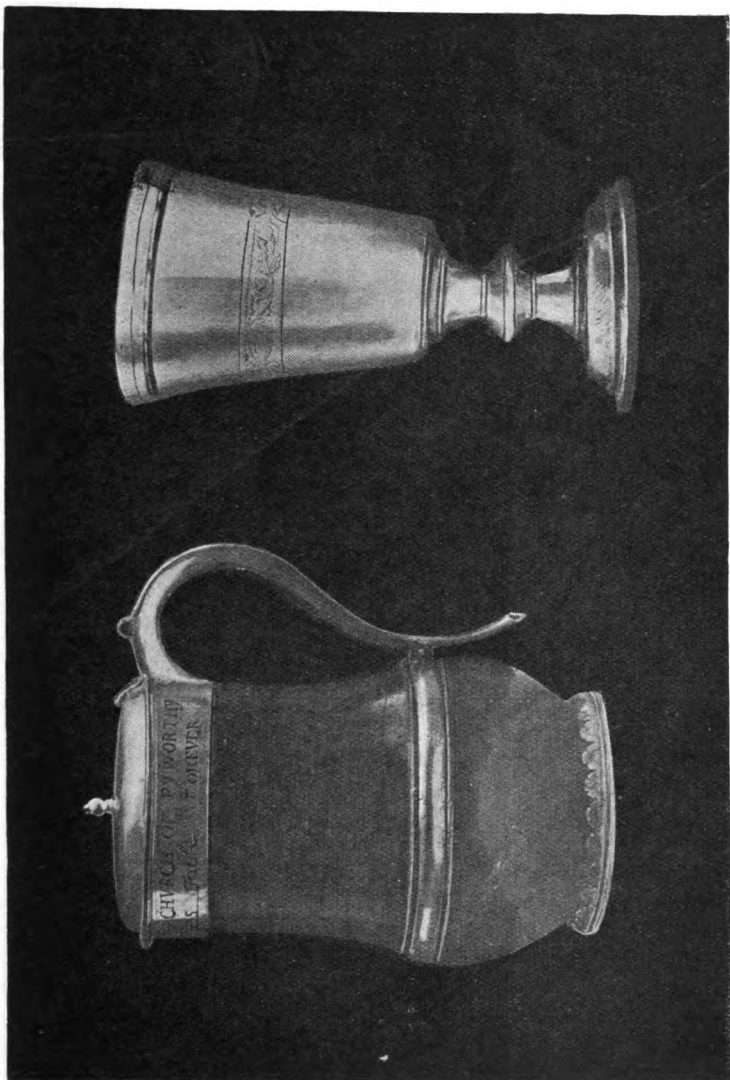
Marks : maker, W & W and London hall-marks for 1911.

Inscription : "St Swithuns Pyworthy. Coronation year of King George V, 1911."

C. Small silver tankard with domed lid. $6\frac{3}{4}$ in. high, 6 in. to lid, $2\frac{3}{8}$ in. diameter at lid, $3\frac{9}{16}$ in. at foot.

Marks : maker, P B & S L^t and London hall-marks for 1911.

Inscription : as on flagon B.



STONEWARE FLAGON. PYWORTH.
LATE SIXTEENTH CENTURY.

CHALICE. BROADWOODWIGER.
BY I. V., EXETER. A.D. 1576.

Alms Dishes.—A. Latten.

B. A fine pewter plate on three feet. $9\frac{3}{8}$ in. diameter, $1\frac{1}{4}$ in. high.

Arms : Arg. a chevron gules between three roses.

C. A plain pewter plate $8\frac{1}{8}$ in. diameter with mark of Henry Hosking.

SUTCOMBE.

Chalice.—Elizabethan, with cover ; a plain example of the Matthew type. Height, $6\frac{3}{4}$ in. ; bowl conical, $3\frac{1}{2}$ in. diameter, 3 in. deep, with band of hit-and-miss work $\frac{1}{2}$ in. wide round centre ; stem has usual Matthew knop and is ornamented with hit-and-miss work ; foot $3\frac{1}{4}$ in. diameter with egg-and-tongue ornamentation.

Marks : (i.) T ; (ii.) **MATHEV** (letters interlinked) ; (iii.) a pomegranate slipped and leaved. Thomas Matthew of Barnstaple (1565–1612).

Patens.—A. Cover to chalice. $3\frac{3}{4}$ in. diameter, $1\frac{1}{8}$ in. high.

Marks : as on chalice.

B. Plain on foot with cable border. $5\frac{3}{4}$ in. diameter, $1\frac{3}{4}$ in. high.

Marks : maker,  crowned (John Elston) and Exeter hall-marks for 1702.

Inscription : “Sutcombe ex dono Johannis Prideaux de Soldon Arm in perpetuam Annæ uxoris ejus memoriam 1703.”

Arms : Arg. a chevron sa. a label of three points, a mullet for difference.

Crest : a Saracen's head.

Flagons.—A & B. A pair of tankards with domed lids. Height, 11 in. ; $4\frac{1}{4}$ in. diameter at foot, $6\frac{1}{4}$ in. at base.

Marks : maker, R A, star over (Richard Raine), and London hall-marks for 1710.

Inscription : “Sutcombe in Corn Devon ex dono Jon^{an}. Prideaux de Thuborough arm. et Annæ uxoris ejus in perpetuam pietatis memoriam, 1710.”

C. & D. A pair of pewter tankards with flat lids dated 1662.

Alms Dishes.—A. A decent bason. 6 in. diam.

Marks and Inscription : as on paten B.

B. A pewter bowl.

C. A plain pewter plate.

All the Sutcombe plate, both silver and pewter, is illustrated in Miss E. K. Prideaux' paper on Sutcombe Church (*Devon Notes and Queries*, Vol. VIII, p. 42).

TETCOTT.

Chalice.—Georgian type. $6\frac{1}{2}$ in. high; bowl, with slight lip, $3\frac{1}{2}$ in. diameter, $4\frac{1}{2}$ in. deep; stem with ring for knop; foot, $3\frac{1}{2}$ in. diameter.

Marks: no maker's, but other London hall-marks for 1729.

Arms: impaled. (i.) Party per chevron az. and erm. two stags' heads caboshed in chief (Arscott); (ii.) Erm. on a bar arg. three eagles' heads erased.

Paten.—Plain on foot. $4\frac{1}{2}$ in. diameter, 1 in. high. No marks.

Flagon.—A tankard with domed lid. 11 in. high, 9 in. to lid, $3\frac{1}{2}$ in. diameter at lid, 6 in. at foot.

Marks: maker only, *JS* on handle, *IS* in bifol. (John Suger, Exeter, ent. 1720.)

Inscription: "June 24 1737. The gift of Jane Hoblyn the relict of John Hoblyn of Braudridge in this parish and daughter of William Symons of Braudridge Esq."

Arms: impaled in a lozenge; (i.) Or a fesse gules, a flasque erm., a mullet for difference (Hoblyn); (iii.) Party per fesse a pale, all countercharged, arg. and purple. Three shamrocks (Symons). It would appear from the inscription that this tankard of right belongs to the parish of Boyton, dio. Truro, though now at Tetcott.

THORNBURY.

Here there is nothing except a chalice and paten of modern mediæval style dated 1883 and 1888, and nothing is known of the whereabouts of older vessels which I saw here forty years ago.

Chalice.—Modern mediæval style. $6\frac{1}{2}$ in. high; bowl conical, $3\frac{1}{2}$ in. diameter, $3\frac{1}{4}$ in. deep; foot circular, $4\frac{1}{4}$ in. diameter.

Marks: maker, *IF* and London hall-marks for 1883.

Paten.—A plain plate. $5\frac{1}{2}$ in. diameter.

Marks: maker, *WK* and London hall-marks for 1888.

THE RURAL DEANERY OF TORRINGTON.

Torrington Rural Deanery, consisting of twenty-three ancient parishes, is the largest and most scattered deanery in the Archdeaconry, stretching from Alverdiscott in the north to Sheepwash in the south, and from Dolton in the east to Newton S. Petrock in the west ; it is also the most difficult of access. With the exception of the town of Torrington it is entirely rural.

Although nothing of pre-Reformation date was discovered, the plate as a whole presents many points of great interest. First, there is a far larger proportion of London work amongst the Elizabethan chalices than in any other deanery of the county that has yet been visited, and on the other hand it has a far larger proportion of Exeter chalices of the eighteenth and nineteenth centuries than any other deanery. Again, the domestic plate adapted to ecclesiastical purposes is above the average both in quality and quantity, and it has the only gold chalice in the Archdeaconry, and the earliest example of a post-Reformation paten, apart from a chalice cover, that I have yet noted.

The substitution of tasteless and valueless modern plate for beautiful and valuable ancient pieces is still very noticeable, but in this deanery curiously it is more apparent in the smaller parishes than the larger. Alverdiscott has nothing older than 1893, and the little parish of Dowland possesses nothing but a poor nineteenth-century goblet and a paten of 1875 ; Beaford's oldest piece is 1818. Elizabethan chalices, most of which have their covers, are found in eight parishes. Those at High Bickington, Huntshaw, Iddlesleigh, and Little Torrington are of London make. The latter parish has a second chalice of the late Elizabethan period, also of London make, but it is a modern gift. Dolton has a chalice dated 1576 by J. Jones of Exeter ; the other three are uncertain. That at Huish is in Lord Clinton's plate room, and I was unable to see it. The Roborough and Yarnscombe chalices have no marks, but the former is probably the work of J. Cotton of Barnstaple, and the latter by Thomas Matthew of Barnstaple. Frithelstock preserves a chalice cover by T. Matthew, but not the chalice.

There are also two fine standing cups of the Elizabethan

period used as chalices at Buckland Filleigh, and a spear-headed cup at Petersmarland. Meeth has a secular wine cup, date 1642, given it in 1749, and Merton a curious wine cup, similar to that at West Putford, dated 1688.

Late chalices of Exeter make are found at Langtree, date 1746, by Thomas Blake; Sheepwash, 1802, by Joseph Hicks; and Beaford, 1818, by George Ferris.

The magnificent jewelled gold chalice at Torrington is fully described in the account of Torrington plate.

All the parishes have silver patens except Meeth. The oldest outside chalice covers is the curious one at Yarnscombe. It is a perfectly flat disc $6\frac{1}{4}$ in. in diameter, with a circular band of strapwork and arabesque foliation $\frac{3}{8}$ of an inch wide. Within this is a circular line, and in the centre of the disc an oblong enclosed at the ends by brackets with the date 1609 (see illustration). It is the earliest strictly post-Reformation paten yet noted in the county, and also the last dated piece of work of the famous goldsmith Thomas Matthew of Barnstaple. He was buried at Barnstaple 29th December, 1611.

Silver flagons are found in fifteen parishes, and pewter in several others. They are all of the straight-sided tankard variety. The oldest are two very fine examples dated 1654 and 1656, both at Buckland Filleigh.

Alms dishes, in many cases domestic pieces of plate, are only found in nine parishes. The only ones that call for any remark are domestic plate, and they will be referred to under that head. There are also several of pewter.

Domestic plate is very well represented, and several of the pieces are very interesting. The most striking are the Elizabethan standing cups at Buckland Filleigh and Petersmarland. The former, before its cover was deprived of its spearhead to be utilized as a paten, must have been a very striking piece. It was without doubt a gift by one of the Fortescue family, who so long were squires of and residents in this parish. There are also wine cups, used as chalices, at Merton and Meeth. The former is a curious piece of punched work ornamented with a tree and birds, and has a cover and trumpet stem to which it is attached by a bolt and nut. It bears a mark that has hitherto been unrecorded, the letters I and D conjoined, stamped three times. In this parish also is a taster with the same marks used as a paten. There are sweetmeat dishes at Langtree and Shebbear, and at the latter parish a bleeding bowl with

pierced handle of silver used as an alms dish or collecting bowl, and among miscellaneous articles a milk jug at Little Torrington and a mug at Great Torrington. Attention should also be called to the very fine example of Jacobean pierced work in the bowl or dish, used as an alms dish, at Buckland Filleigh, which is fully described in the account of the plate of that parish. (See illustrations.)

Pewter vessels are preserved or in use still in several parishes. In the latter case they have been electro-plated, and it is gratifying to find that more care is now being taken to preserve articles of this metal.

Armorial bearings are found at Beaford, Buckland Filleigh, Huish, Meeth, and S. Giles. The parishes of Frithelstock, High Bickington, and Torrington were inspected in 1914, all the others in 1915, and I must acknowledge the kind assistance, facilities for examination, and hospitality that was offered me by all the clergy of this Deanery.

J. F. CHANTER.

ALVERDISCOTT.

Chalice.—A. Modern mediæval style. $6\frac{1}{2}$ in. high; bowl conical, 3 in. diameter, $2\frac{9}{16}$ in. deep; stem hexagonal with knop; foot, six-lobed.

Marks: maker, S B, F. W and London hall-marks for 1893.

B. Georgian style. $8\frac{3}{4}$ in. high; plated.

Paten.—Modern mediæval style; plain. $5\frac{1}{4}$ in. diameter.

Marks: maker, W. G, J. L. and London hall-marks for 1891.

Flagon.—Modern mediæval style. Silver and glass.

Marks: maker, W. G, J. L. and London hall-marks for 1891.

Alms Dishes.—A pair of electro-plated plates, 10 in. diameter, with I H S., halo and cross.

BEAFORD.

Chalice.—A nondescript cup of the late Georgian period, 6 in. high; bowl bell-shaped, with marked lip and gad-roon mount just below the lip, $3\frac{7}{8}$ in. diameter, $3\frac{1}{2}$ in. deep; stem with small knop; foot, $3\frac{1}{2}$ in. diameter.

Marks: maker, G. F (George Ferris) and Exeter hall-marks for 1818.

Paten.—A. Plain disc, silver-gilt. $6\frac{1}{2}$ in. diameter, with Agnus Dei engraved on it.

Marks : S B, F W and London hall-marks for 1896.

B. A pewter paten on stand. $8\frac{1}{2}$ in. diameter, with arms, a chevron between three roundels charged with three millrinds (Mill).

BUCKLAND FILLEIGH.

This parish possesses a most interesting and valuable collection of plate, mainly domestic pieces of the late Elizabethan and Stuart periods.

Chalices.—A. A very fine example of a late sixteenth-century standing cup with what was a spear-headed cover. The latter, however, has been mutilated by cutting off the spear-head and leaving three stumps as legs to allow its being used as a paten. The cup is somewhat similar to the Sidney Sussex standing cup (see illustration and Jackson's *I. E. P.*, facing p. 657), $9\frac{1}{2}$ in. high, with cover ; present height is $11\frac{1}{8}$ in. The bowl is $4\frac{1}{4}$ in. diameter and $4\frac{1}{8}$ in. deep, decorated with three bosses of repoussé work and chasing. The baluster stem has three grotesque scroll brackets ; the foot is 4 in. diameter and ornamented with Elizabethan style tongue work. (See illustration.)

The cover, as mentioned above, has been mutilated. It is domed shape and continues the lines of character of the bowl, so that when it is on the cup an egg-shaped outline is presented. It now terminates in three short legs, on which it stands when reversed. These three legs were formerly the bare supports of a steeple or spear-top, making the cup several inches higher than at present.

Marks : maker, G in an irregular shaped shield and London hall-marks for 1599.

Inscription : On rim, pricked " R F, H F."

B. A small, elegant cup for private celebrations of wine-glass style on slender stem. 4 in. high ; bowl, $1\frac{1}{8}$ in. diameter, $1\frac{3}{8}$ in. deep ; stem, octagonal ; foot, irregular octagon, $1\frac{1}{4}$ in. diameter ; all ornamented with chasing.

Marks : maker, G R and London hall-marks for 1848.

Patens.—A. Cover to chalice A. For description, see above.

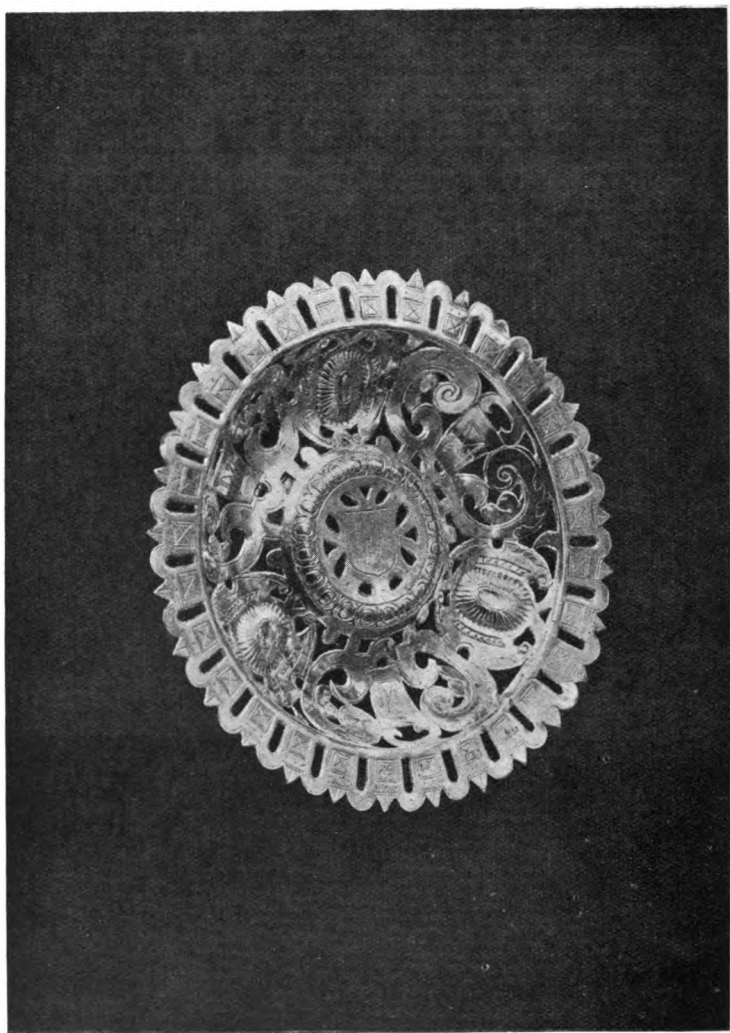
B. Plain on stand. 6 in. diameter, $1\frac{1}{4}$ in. high.

Marks : maker, CI , crown over (John Elston), and Exeter hall-marks for 1713.



STANDING CUP. BUCKLAND FILLEIGH.
A.D. 1599.

CHURCH PLATE REPORT.—*To face page 118.*



OVAL PIERCED WORK BOWL. BUCKLAND FILLEIGH.
EARLY SEVENTEENTH CENTURY.

CHURCH PLATE REPORT.—*To face page 119.*

C. A small chased paten on stand to match chalice B. $2\frac{1}{2}$ in. diameter; marks as on chalice B.

Inscription: "From **C B F** and her children to the Rev J. R. Powell—Oct 17th 1854."

Flagons.—A. A plain flat-lidded tankard. $9\frac{1}{4}$ in. high, $8\frac{1}{8}$ in. to lid, $4\frac{3}{8}$ in. diameter at lid, $6\frac{5}{8}$ in. at foot.

Marks: maker, **R N** (Richard Neale) and London hall-marks for 1656.

Arms: Or a bend between six martlets (Luttrell) impaled with az. a bend engrailed arg. cottised (Fortescue).

B. A plain, flat-lidded tankard. 10 in. high, $8\frac{9}{16}$ to lid, $4\frac{1}{4}$ in. diameter at lid, $6\frac{1}{2}$ in. at foot.

Marks: maker, **T L** and London hall-marks for 1654 or 1659.

Arms: Az. three battle-axes erect or (Dennis).

Alms Dish.—A fine example of a Jacobean pierced work, bowl or dish. $9\frac{1}{2}$ in. diameter, $1\frac{7}{8}$ in. high, on a foot $3\frac{1}{4}$ in. diameter. On the raised centre is a shield, on which is

pricked **K B**
M F 1662. In the hollow curve of the bowl there is alternating scroll work and large cartouches enclosing raised ellipses. The rim is flat and pierced with round-headed slits. The outer edge is scalloped, a triangular leaf being set between each scallop. (See illustration.)

Marks: none.

Inscription: "**K B, M F** 1662."

A very similar dish is in the possession of C. H. Chichester, Esq., of Hall, Bishops Tawton, and there is an illustration of a similar piece in Jackson's *I. E. P.*, p. 211, with the date 1615, so the Buckland Filleigh piece may be referred to the same period.

DOLTON.

Chalice.—Elizabethan style, with its cover, of Exeter make, but without usual Exeter lip. $6\frac{3}{4}$ in. high; bowl conical, $3\frac{5}{8}$ in. diameter, $3\frac{7}{8}$ in. deep, with two bands of strapwork and arabesque foliage, each $\frac{5}{8}$ in. wide; stem with small knop, and foot with slight ornamentation of short diagonal lines.

Marks: (i.) **IONS**; (ii.) **B**; (iii.) Exeter town mark. The chalice cover is $3\frac{7}{8}$ in. diameter, $1\frac{1}{2}$ in. high, with narrow band of strapwork $\frac{3}{8}$ in. wide round edge. On the button arabesque ornamentation and the date 1576.

Patens.—A. Chalice cover, see above.

B. Plain on foot. 6 in. diameter, $2\frac{1}{4}$ in. high.

Marks: maker, Wi (Zachariah Williams) and Exeter hall-marks for 1717.

Flagon.—A tankard with fluted sides, spout and cross on top of lid. 12 in. high, $3\frac{1}{2}$ in. diameter at lid, 5 in. at foot, which is six-lobed.

Marks: J A and I A (J. and J. Aldous) and London hall-marks for 1833.

Alms Dishes.—A pair of plain plates. 9 in. diameter, with cross and sacred monogram in centre of Sheffield plate.

DOWLAND.

Chalice.—A Georgian goblet. $5\frac{1}{2}$ in. high; bowl semi-ovate on shape $3\frac{1}{2}$ in. diameter, $3\frac{3}{4}$ in. deep.

Marks: maker, T H (Thomas Holford) and London hall-marks for 1808.

Paten.—Modern mediæval style, with cross patté in centre. 5 in. diameter.

Marks: J. W & Co (J. Wippell & Co.) and London hall-marks for 1875.

Breads Box.—Glass, with Sheffield plate cover.

FRITHELSTOCK.

Chalice.—Georgian style. $8\frac{3}{4}$ in. high; bowl, $3\frac{3}{4}$ in. diameter, 4 in. deep; foot circular, $3\frac{3}{4}$ in. diameter.

Marks: maker, *S E* in oval (? H. Servante). The date letter is undecipherable, but it has the erased lion's head of the Britannia cycle commencing 1701. Weight, 12 oz. 15 dwt.

Patens.—A. An Elizabethan chalice cover. 4 in. diameter with foliated band $\frac{1}{2}$ in. diameter. It is a plain lid without button, and has the three usual marks of Thomas Matthew. (i.) T; (ii.) MATHEV, letters interlinked, (iii.) pomegranate slipped and leaved.

Inscription: "Frithelstock."

Weight, 3 oz. 12 dwt.

B. Plain on foot. 7 in. diameter, $1\frac{3}{4}$ in. high; foot, $2\frac{1}{2}$ in. diameter.

Marks: *J. E.* label over (John Elston, jr.) and Exeter hall-marks for 1730.

Inscription: "Frithelstock."

Weight, 8 oz. 4 dwt.

Flagon.—A plain tankard. 11 in. high, $9\frac{1}{4}$ in. to lid, $3\frac{1}{2}$ in. diameter at lid, $6\frac{1}{8}$ in. at foot.

Marks : **T W C W**, in circle (Whipham & Wright) and London hall-marks for 1764.

ST. GILES IN THE WOOD.

Chalices.—A. A Georgian shaped bowl, on a modern mediæval style stem and foot $8\frac{1}{4}$ in. high ; bowl, 4 in. diameter, $3\frac{1}{8}$ in. deep ; stem hexagonal with large boss ; foot six-lobed on a circular base, 5 in. diameter.

Marks : **G F** (George Fox) and London hall-marks for 1862.

Inscription : "The gift of Louisa Lady Rolle to the Church of St. Giles in the Wood."

B. Modern mediæval style. $6\frac{1}{2}$ in. high ; bowl conical, $4\frac{1}{2}$ in. diameter, $2\frac{3}{4}$ in. deep ; stem, hexagonal ; foot, six-lobed, $4\frac{1}{2}$ in. diameter.

Marks : maker, **J. W & Co** (J. Wippell & Co.) and London hall-marks for 1909.

Inscription : "For the love of Jesus and to the dear memory of A. E. W."

C. A goblet of Georgian type. 6 in. high ; bowl semi-ovate, $3\frac{1}{2}$ in. diameter, $3\frac{3}{4}$ in. deep, with beading beneath rim ; foot, with beading, $3\frac{1}{4}$ in. diameter.

Marks : maker indecipherable, and London hall-marks for 1800.

Inscription : "J. F" (John Fowte) and Crest. (An owl.) **A A T & A E W**. "Grant them oh Lord eternal rest and let perpetual light shine upon them."

Patens.—A. On stand. $8\frac{1}{2}$ in. diameter, $3\frac{1}{4}$ in. high, with beaded rim and scalloped depression ; another inner circular depression engraved **I H S** ; foot, six-lobed on circular base.

Marks : **C. T. F. G. F.** (C. T. and G. Fox) and London hall-marks for 1853.

Inscription : as on chalice A.

B. Plain plate. $5\frac{1}{2}$ in. diameter.

Marks and inscription : as on chalice B.

Flagon.—Victorian style tankard with spout and cross on lid. Height $11\frac{1}{2}$ in., 9 in. to lid, $3\frac{1}{4}$ in. diameter at lid, 6 in. at base, which is six-lobed, on a circular plate.

Marks and inscription : as on paten A.

Alms Dish.—To match chalice. Chalice and paten A. 10 in. diameter.

Marks : maker, C T F, G F (C. T. & G. Fox) and London hall-marks for 1849.

Baptismal Shell.—Mother of pearl with silver mount and cross.

Marks : J. W & Co (J. Wippell & Co.) and London hall-marks for 1908.

Inscription : "The gift of the mothers and children of S. Giles in the Wood 1908."

Candlesticks.—Two fine pairs of brass.

HIGH BICKINGTON.

Chalice.—Late Elizabethan, of London make, but Exeter style of lip, with its cover. $6\frac{1}{4}$ in. high ; bowl, $3\frac{1}{8}$ in. diameter, $3\frac{1}{8}$ in. deep, with narrow bands of strapwork, one $\frac{3}{8}$ in. wide at lip, the other $\frac{1}{4}$ in. wide in centre ; stem with knop and circular foot.

Marks : Maker, L B with rosette over and London marks for 1599.

The cover : $3\frac{1}{2}$ in. diameter, $1\frac{1}{4}$ in. high. Has narrow strapwork band, and button pricked with an acorn and leaves.

No marks.

Patens.—A. Chalice cover, see above.

B. Stands on three feet curled up at ends. $7\frac{3}{4}$ in. diameter.

Marks : Maker, J L (John Lambe) and London hall-marks for 1808.

Inscription : "Take eat this is my body which is given for you. Mark 14th chap. 22 verse I. H. S." Weight, 8 oz. 4 dwt.

Alms Dish.—Plain plate. $7\frac{1}{2}$ in. diameter.

Marks : as on paten B.

Inscription : "He that hath pity on the poor lendeth unto the Lord. 19th Prov. 17 ver." Weight, 7 oz. 5 dwt.

Flagons. A. Small glass and silver.

B. Pewter, now used as font ewer.

HUISH.

Chalice.—A. An Elizabeth cup, with its cover dated 1576. It is not in use, and is in Lord Clinton's custody, and in his absence I was unable to see it or get further particulars.

B. Modern mediæval style. $7\frac{3}{4}$ in. high; bowl hemispherical, $4\frac{3}{8}$ in. diameter, $2\frac{1}{8}$ in. deep; stem circular, with six small pillars clustered round it and large twisted knot; foot circular, 5 in. diameter, with enamels of the symbols of the four evangelists.

Marks: maker, J. B and London hall-marks for 1853.

Patens.—A. Cover to chalice A. Date, 1576.

B. Plain mediæval style, silver-gilt. $7\frac{1}{4}$ in. diameter, with deep circular depression.

Marks: as on chalice B.

C. A small waiter on three legs with shell border.

Marks: *R A* in two-lobed shield (Robert Abercromby), and London hall-marks for 1740.

Inscription: "Ex dono Richardi Yeo Arm, hujus Ecclesiæ de Huish Patron 1740."

Arms, mantled: Arg. a chevron sable between three mallards (Yeo); on a shield of pretence, quarterly, i and iv. a fesse gules between three crescents; ii. and iii. on a chief indented or two bezants, three trefoils, slipped.

Crest: a peacock.

Flagon.—A domed lid tankard with inscription as on paten C and Arms of Yeo.

HUNTSHAW.

Chalice.—Elizabethan, with its cover. 6 in. high; bowl conical, $3\frac{1}{8}$ in. diameter, $3\frac{1}{4}$ in. deep, with two bands of strapwork and arabesque foliation $\frac{1}{2}$ in. wide, circular stem with two annular enlargements for knop; foot circular, $2\frac{7}{8}$ in. diameter, with band $\frac{1}{4}$ in. wide of hit-and-miss ornamentation.

Marks: maker, I P in shaped shield and London hall-marks for 1573.

The cover is $3\frac{3}{8}$ in. diameter, $1\frac{1}{4}$ in. high, with band $\frac{1}{2}$ in. wide of strapwork and arabesque foliation, and button with date 1574.

Marks: as on chalice.

Patens.—A. Chalice cover, see above.

B. Modern mediæval style. $5\frac{3}{4}$ in. diameter; plated.

C. Pewter on stand. $9\frac{1}{4}$ in. diameter, with marks of J. Webber, jr., of Barnstaple.

Flagon.—A pewter flat lid tankard. $9\frac{1}{4}$ in. high.

Alms Dish.—Plain pewter plate. 12 in. diameter.

IDDESLEIGH.

Chalice.—Elizabethan, with its cover. $6\frac{3}{4}$ in. high ; bowl bell-shaped with two bands of strapwork and arabesque foliation $\frac{1}{2}$ in. wide, is $3\frac{1}{2}$ in. diameter, $3\frac{3}{4}$ in. deep ; stem with knop, circular ; foot, $3\frac{1}{2}$ in. diameter, with egg ornamentation.

Marks : maker, a hand grasping a hammer between **H C** and London hall-marks for 1576.

The cover is $3\frac{7}{8}$ in. diameter, $1\frac{1}{4}$ in. high, with band of strapwork and foliation $\frac{1}{2}$ in. wide ; button has the date 1576.

Marks : as on chalice.

Patens.—A. Cover to chalice, see above.

B. Plain on stand. 7 in. diameter, $1\frac{7}{8}$ in. high.

Marks : **E E J W B** (Messrs. Barnard) and London hall-marks for 1844.

Inscription : "Parish of Iddesleigh Devon 1844 Given by H. Mallet Esq."

C. Pewter on stand. $7\frac{3}{4}$ in. diameter, $2\frac{3}{8}$ in. high.

Flacons.—A. A Victorian tankard with spout and cross. $10\frac{1}{2}$ in. high, $7\frac{3}{4}$ in. to lid, $3\frac{3}{4}$ in. diameter at lid, $5\frac{1}{2}$ in. at foot.

Marks : maker, **E E J W B** (Messrs. Barnard) and London marks for 1834.

Inscription : "Iddesleigh 1834. The gift of Hugh Mallet of Ash Esq."

B. Pewter. A flat lidded tankard. 10 in. high ; damaged.

LANGTREE.

Chalice.—Georgian style. 8 in. high ; bowl with marked lip 4 in. diameter, $4\frac{1}{4}$ in. deep ; stem with ring for knop ; foot circular, $3\frac{7}{8}$ in. diameter.

Marks : maker, **T B** in oval (Thomas Blake of Exeter, 1722–1759) and Exeter hall-marks for 1746.

Inscription : "Langtree 1747."

Paten.—Plain on stand. $8\frac{1}{8}$ in. diameter, $1\frac{1}{4}$ in. high ; foot, $2\frac{3}{4}$ in. diameter.

Marks : **T C** in monogram, and London hall-marks for 1683.

Inscription : "J E. Honour the Lord with thy substance Langtree 1685."

Flagon.—A domed lid tankard. 10 in. high, $8\frac{3}{4}$ in. to lid, $3\frac{3}{8}$ in. diameter at lid, 6 in. at foot.

Marks : maker, **T W C W** (Thomas Whipham, Charles Wright) and London hall-marks for 1758.

Inscription : "The gift of Adam Flexman Rector 1758."

Alms Dish.—A sweetmeat dish or saucer, punched with pellets and six acanthus leaves radiating from a centre ; handles of cockle-shell (one is broken off and missing).

Marks : maker, **R L**, with estoile below (? Roger Lee), and London hall-marks for 1667.

LITTLE TORRINGTON.

Chalices.—A. Elizabethan, without its cover. $5\frac{3}{4}$ in. high ; deep conical bowl, 3 in. diameter, $3\frac{1}{2}$ in. deep with band of strapwork $\frac{1}{2}$ in. diameter ; stem with small knop ; foot, $3\frac{1}{8}$ in. diameter with egg-and-tongue ornamentation.

Marks : maker, indecipherable, and London hall-marks for 1573.

Inscription : "Little Torrington."

B. A V-shaped cup with baluster stem. $5\frac{3}{4}$ in. high ; bowl, V-shape, $3\frac{1}{4}$ in. diameter, $3\frac{1}{4}$ in. deep ; foot circular, $2\frac{3}{4}$ in. diameter.

Marks : maker, **I K**, and London hall-marks for 1600.

Inscription : "Given to Little Torrington July 1895."

Paten.—Plain on stand. 7 in. diameter, 2 in. high.

Marks : maker, **W P**, in oblong, and Exeter hall-marks for 1754.

Flagons.—A. A tankard with domed lid. 11 in. high, $9\frac{1}{2}$ in. to lid, $3\frac{3}{4}$ in. diameter at lid, $6\frac{3}{4}$ in. at foot.

Marks and inscription : as on paten.

B. A pitcher-shaped milk jug. $5\frac{1}{2}$ in. high.

Mark : **O U R L**, rest indecipherable, but date letter appears to be 1821.

C. A pair of silver and glass cruets with London hall-marks for 1900.

Alms Dish.—A bowl. $6\frac{3}{4}$ in. diameter, $2\frac{1}{2}$ in. high.

Marks and inscription : as on paten and flagon A.

Breads Box.—3 in. square ; plated.

MEETH.

Chalice.—A baluster stem wine cup. 7 in. high ; bowl conical, $4\frac{1}{4}$ in. diameter, $4\frac{3}{4}$ in. deep.

Marks : P B, crescent below, and London hall-marks for 1642.

Inscription : "The gift of Richard Blinch of Bideford the patron of this Church of Meeth in the County of Devon 1749. Remember the giuer P. B. ^B_{P S} 1648."

Arms : An arm manched holding a fleur-de-lys in the hand.

Crest : a dove with olive branch.

Paten.—Plate. 6 in. diameter ; plated.

Flagons.—A. Modern mediæval style. 10½ in. high ; plated.

B. A pewter tankard. 11½ in. high. It has a spout, which is a later insertion.

Alms Dishes.—A. A pewter basin. 7 in. diameter, 2 in. high.

B. A pewter plate. 8¾ in. diameter.

MERTON.

Chalice.—A wine cup with cover on a trumpet stem, to which it is attached by a bolt and nut. 7¾ in. high ; bowl, 3½ in. diameter, 4⅛ in. deep, ornamented with punched work of a tree with birds ; the stem has no foot beyond the spread of the stem, and is hammered out of one piece of silver ; the cover is dome-shaped, with button on the top with Tudor rose.

Marks : (i.) D conjoined ; (ii.) and (iii.) the same as (i.), both on bowl and cover.

Inscription : "Merton 1688."

Paten.—A. A taster or sweetmeat dish with short trumpet stem. 6 in. diameter, 2 in. high, with angular fluted ribs.

Marks : as on chalice.

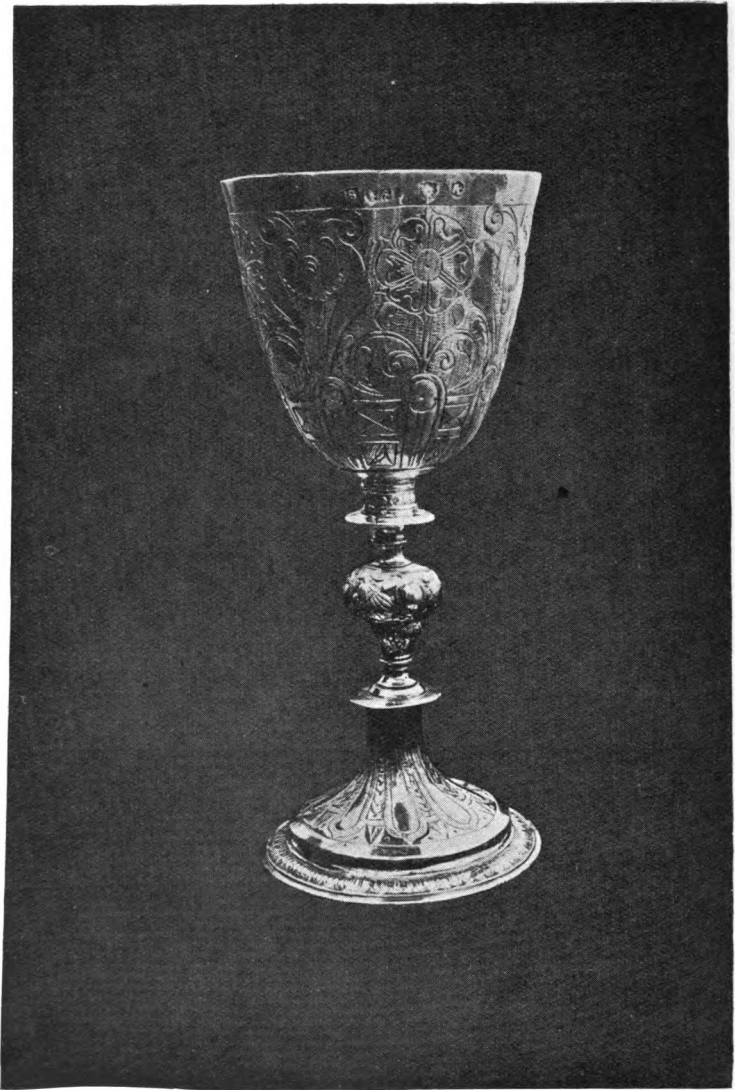
Both chalice and paten are very similar to those at West Putford, and are by the same maker ; and similar pieces are illustrated in Jackson's *I. E. Plate*, figs. 242, 92.

B. Cover to chalice, see above.

C. A flat, silver disc. 5¾ in. diameter.

Marks : maker, T P and London hall-marks for 1895.

Inscription : "Presented by the Confraternity of the Blessed Sacrament."



STANDING CUP. PETERSMARLAND.
A.D. 1595.

CHURCH PLATE REPORT.—*To face page 127.*

Flagon.—A domed lid tankard. 11 in. high, $9\frac{1}{8}$ in. to lid, $3\frac{1}{2}$ in. diameter at lid, $6\frac{1}{2}$ in. at foot.

Marks : P B W B (Peter and William Bateman) and London hall-marks for 1805.

Inscription : "Merton. Purchased by the parishioners 1806, David Horndon, A. M. Rector, John Mill and Thomas Western Churchwardens."

Alms Dish.—Plain plate. 8 in. diameter.

Marks : as on flagon.

Inscription : "Merton the gift of David Horndon A. M. Rector 1806."

NEWTON S. PETROCK.

Chalice.—Puritan type. $6\frac{3}{4}$ in. high ; bowl with slight lip, 3 in. diameter, $3\frac{3}{4}$ in. deep ; trumpet stem, and foot 3 in. diameter.

Marks : maker, G H, in oblong (? George Houston), and London hall-marks for 1780.

Inscription : "The gift of Mrs. Christiana Maria Stevens 1780."

Paten.—Plain on stand. $6\frac{1}{2}$ in. diameter, $1\frac{7}{8}$ in. high.

Marks : R I (Robert Jones) and London hall-marks for 1780.

Inscription : as on chalice.

Flagon.—Domed lid tankard. $11\frac{1}{2}$ in. high, $3\frac{7}{8}$ in. diameter at lid, $6\frac{1}{8}$ in. at foot.

Marks : maker, H T, and London hall-marks for 1780.

Inscription : as on chalice.

Alms Dish.—A plain plate. $7\frac{1}{2}$ in. diameter.

Marks : maker, R I (Robert Jones), and London hall-marks for 1778.

Inscription : as on chalice.

PETERSMARLAND.

Chalices.—A. A fine tall standing cup, silver-gilt, but wanting its cover, of the Elizabethan style. Height, $8\frac{5}{8}$ in. ; bowl, $3\frac{9}{16}$ in. diameter and $3\frac{1}{2}$ in. deep. Is ornamented all over with a combination of flat chasing and repoussé work of flowers and foliage. It has a plain baluster stem ; foot circular, $3\frac{1}{2}$ in. diameter. (See illustration.)

Marks : maker, A B conjoined, and London hall-marks for 1595. (The marks are somewhat indistinct, and date letter is possibly 1615.)

Inscription : pricked in centre of bowl “ $\begin{smallmatrix} O & C \\ & A \end{smallmatrix}$,” and on edge of rim of bowl, “The gift of Robert Rolle Esq 1701.”

B. For private celebrations what is apparently a Georgian style egg cup with cable border to foot. $3\frac{5}{8}$ in. high ; bowl is $2\frac{1}{4}$ in. diameter.

Marks : maker, E. E. J. W. B. (Messrs. Barnard), and London hall-marks for 1832.

Paten.—Plain on stand. 7 in. diameter, $2\frac{1}{8}$ in. high.

Marks : maker, **W P**, and Exeter hall-marks for 1756.

Flagon.—A domed lid tankard. $10\frac{1}{2}$ in. high, $3\frac{1}{2}$ in. diameter at lid, $6\frac{1}{2}$ in. at foot.

Marks : maker, **W P**, and Exeter hall-marks for 1756.

PETROCKSTOWE.

Chalices.—A. Puritan style. $7\frac{3}{8}$ in. high ; bowl conical, with flat bottom and slight lip, 4 in. diameter, $4\frac{1}{4}$ in. deep ; trumpet stem, with foot $3\frac{1}{8}$ in. diameter.

Marks : maker, A. Goose in a dotted circle, and London hall-marks for 1682.

Weight, 13 oz. 1 dwt.

B. Modern mediæval style. $5\frac{1}{2}$ in. high ; electro-plated.

Paten.—Plain on stand. 6 in. diameter, $1\frac{1}{2}$ in. high ; foot, $3\frac{1}{4}$ in. diameter.

Marks : as on chalice A.

Weight, 8 oz. 18 dwt.

Flagon.—A flat lid tankard. 10 in. high, 9 in. to lid, $4\frac{1}{2}$ in. diameter at lid, 7 in. at foot.

Marks : as on chalice and paten.

Weight, 58 oz. 8 dwt.

ROBOROUGH.

Chalice.—Elizabethan, a very plain piece of the Barnstaple type, probably the work of J. Cotton of Barnstaple, though it has no marks. $5\frac{3}{4}$ in. high ; bowl conical, $3\frac{1}{2}$ in. diameter, $3\frac{1}{8}$ in. deep, with a narrow band $\frac{1}{2}$ in. wide of hit-and-miss work near the rim. The stem is similar to all the Cotton chalices, and consists of two spools (see illustration; Stoke Rivers, 1st Report) ; foot, $3\frac{3}{8}$ in. diameter, ornamented with band of hit-and-miss work $\frac{1}{4}$ in. wide and diagonal strokes.

No marks.

The cover is plain without button. $3\frac{1}{2}$ in. wide, 1 in. high, and slight ornamentation of diagonal hit-and-miss

work. The whole piece is in bad order, but the bowl has been strengthened with a narrow band of silver near the rim, which may hide a mark.

Patens.—A. Chalice cover, see above.

B. A plain plate of pewter. $9\frac{3}{8}$ in. diameter, that has been silver-plated.

Flagon.—A flat lid tankard. $11\frac{3}{8}$ in. high, $3\frac{3}{4}$ in. diameter at lid, $5\frac{1}{4}$ in. at lid. It is pewter that has been silver-plated.

Alms Bowl.—A pewter bowl, silver-plated. 10 in. in diameter, $2\frac{3}{4}$ in. high.

SHEBBEAR.

Chalice.—A goblet of Georgian style. $7\frac{1}{2}$ in. high; bowl semi-ovate shape, $4\frac{1}{4}$ in. diameter, 4 in. deep, with a beaded border round base; stem with no knob; foot, with beading, $3\frac{3}{4}$ in. diameter.

Marks: maker, *H B* (Hester Bateman), and London hall-marks for 1788.

Inscription: "Shebbear Devon W. Hockin J. Brent 1788."

Crest: A dove rowsant with olive branch.

Paten.—A sweetmeat dish. $6\frac{3}{4}$ in. diameter; height, 1 in.; embossed with large pellets; in centre a circle of pellets $2\frac{1}{2}$ in. diameter. From this radiate four spear-heads with ellipses of dots on each side, and parted by a trefoil of pellets. The leaf handles are missing.

Marks: maker, *H*, with two crescents above in a shield, and London hall-marks for 1659.

Flagon.—A tankard with domed lid. $12\frac{3}{8}$ in. high, $10\frac{1}{2}$ in. to lid, $4\frac{1}{2}$ in. diameter at lid, 8 in. at base.

Marks, inscription, and crest: as on chalice.

Alms Dishes.—A. A bleeding bowl. 5 in. diameter, $1\frac{1}{2}$ in. high, with pierced handle $2\frac{1}{4}$ in. long.

Marks: maker, *E G*, in oblong octagon, and London hall-marks for 1671.

B. Brass. 12 in. diameter.

SHEEPWASH.

Chalices.—A. A goblet. $7\frac{1}{8}$ in. high; bowl is bellied shape, 4 in. diameter, $4\frac{3}{4}$ in. deep, with trumpet stem.

Marks: maker, *J H* (Joseph Hicks), and Exeter hall-marks for 1802.

Inscription : " Sheepwash Sep. 22nd 1802."

B. Modern mediæval style. $5\frac{1}{2}$ in. high ; bowl conical, $3\frac{1}{8}$ in. diameter, 2 in. deep ; stem circular, with slight knob ; foot circular, $3\frac{1}{2}$ in. diameter.

Marks : J. W & Co. (J. Wippell & Co.), and London hall-marks for 1907.

*Paten*s.—A. Plain on stand. $8\frac{3}{8}$ in. diameter, $2\frac{1}{2}$ in. high.

Marks : maker, CI , crown over (John Elston), and Exeter hall-marks for 1719.

Inscription : " Holland 1719."

B. Plain plate. $4\frac{9}{16}$ in. diameter.

Marks : as on chalice B.

C. Plate. 6 in. diameter ; electro-plated.

Flagon.—A Victorian style tankard with spout. $11\frac{1}{2}$ in. high, 9 in. to lid, $3\frac{1}{4}$ in. diameter at lid, $5\frac{1}{2}$ in. diameter at foot ; engraved in centre.

Marks : R. M. E. H (Martin Hall & Co.), and Sheffield hall-marks for 1873.

Inscriptions : round centre, " If ye love me keep my commandments. This flagon is given to Sheepwash Church by Mary Anne Coham, July 1873, who earnestly prays to further the worship of God on earth, and while we have time do good to all men, and especially unto them that are of the household of the faith. Gal. vi. 10."

" Compton, Plymouth."

TORRINGTON.

Chalices.—A. Georgian style. 9 in. high ; bowl, $4\frac{1}{2}$ in. diameter, 5 in. deep ; stem with knob ; foot circular, $3\frac{1}{4}$ in. diameter.

Marks : maker, CI , crown over (John Elston), and Exeter hall-marks for 1719.

B. Modern mediæval style. Electro-plated.

C. A solid gold chalice in the modern mediæval style. $7\frac{1}{2}$ in. high ; the bowl is conical, with repoussé work round base, $3\frac{1}{4}$ in. diameter, $2\frac{1}{2}$ in. deep ; stem circular, with large boss set with six sapphire pebbles ; at foot of the stem are six moonstones and six rubies, below these a circle of twelve pearls ; the foot is six-lobed, on which are six enamel medallions of varied colours, on which is represented :—

(i.) A calvary on red enamel.

(ii.) Our Lord emerging from the tomb on green enamel.

(iii.) Our Lord with uplifted hand blessing between Alpha and Omega on blue enamel.

(iv.) Our Lord in the manger with the Blessed Virgin Mary on red enamel.

(v.) Our Lord's baptism on green enamel.

(vi.) Our Lord strengthened by the Angel of the Agony on blue enamel.

Marks : (i.) **C K** (Charles Keith) ; (ii.) leopard's head ; (iii.) 18 ; (iv.) crown ; (v.) date letter for 1909 (London).

Inscription : " To the glory of God and in memory of John Adams ; born 6 Sep. 1820. Died 31 Jan. 1910, presented to S. Michael and all Angels' Church Torrington by his children."

Patens.—A. A dwarf tazza. 7 in. diameter, $2\frac{1}{4}$ in. high.

Marks : maker, **G F**, fleur-de-lys below, and London hall-marks for 1637.

B. Modern mediæval style. Electro-plated.

C. Modern mediæval style, to match chalice C, and also of solid gold. 6 in. diameter.

Marks and inscription : as on chalice C.

Flagons.—A. A domed lid tankard. $11\frac{1}{2}$ in. high, $9\frac{1}{4}$ in. to lid, $4\frac{1}{2}$ in. diameter at lid, 7 in. at foot.

Marks : maker, **℄**, crown over (John Elston), and Exeter hall-marks for 1719.

Inscription : " The gift of Mrs. Margaret Sweete of Great Torrington widow Dec. 1718."

B. A very solid and heavy domed lid tankard. Height, 12 in., $9\frac{1}{2}$ in. to lid, $4\frac{1}{2}$ in. diameter at lid, $7\frac{1}{4}$ in. at foot.

Marks : maker, **P E**, in oval (Philip Elston), and Exeter hall-marks for 1729.

Inscription : " Ex dono Johannis Rolle Armigeri de Stevenstone. Anno Dom 1729."

Alms Dishes.—A. A bowl on foot. 9 in. diameter, $4\frac{1}{4}$ in. high.

Marks : maker, **℄**, crown over (John Elston), and Exeter hall-marks for 1729.

Inscription : " Ex dono Johannis Rolle Armigeri de Stevenstone Anno Dom 1729."

B. Modern mediæval style, plate. $17\frac{1}{2}$ in. diameter. Round the rim in black-letter is engraved : " He that hath pity on the poor lendeth to the Lord."

Marks : maker, **H E**, in a trefoil, and London hall-marks for 1900.

Inscription : " To the glory of God and in ever loving memory of Edward Sutcliffe ; born Feb. 20 1830 ; died Jan. 29 1900. This alms dish is dedicated by his wife and children."

There is also a little cup, in shape of half-pint pot. $3\frac{1}{2}$ in. high, $2\frac{1}{2}$ in. diameter at top, 3 in. at bottom.

Marks : maker, *J E*, label over (John Elston, jr.), and Exeter hall-marks for 1724.

YAENSCOMBE.

Chalice.—Elizabethan, Matthew style. 7 in. high ; bowl bell-shaped, $4\frac{1}{2}$ in. diameter, $3\frac{5}{8}$ in. deep, with band of strapwork and arabesque foliation $\frac{5}{8}$ in. wide, less than half an inch below the rim. At the junction of the bowl and stem is an ornamental band of pellets in a fillet ; stem has a large knop, with hit-and-miss ornamentation ; foot, $3\frac{1}{2}$ in. diameter, with tongue-and-dart ornamentations.

No marks.

Patens.—A. A perfectly flat disc. $6\frac{1}{4}$ in. diameter. Near the rim is a band of strapwork and arabesque foliation $\frac{3}{8}$ in. wide. Within this is a circle formed by a single line, and within this an oblong enclosed by brackets with date 1609.

Marks : (i.) pomegranate slipped and leaved ; (ii.) T ; (iii.) MATHEV, letters interlinked. (See illustration.)

This piece is specially interesting as the earliest post-Reformation paten, apart from a chalice cover hitherto observed in the county, and also the latest dated piece of work of the great Barnstaple silversmith Thomas Matthew. He was buried at Barnstaple 29 Dec. 1611.

B. Plain on stand. $5\frac{1}{4}$ in. diameter, $1\frac{1}{2}$ in. high.

Marks : makers, R. G., T. C. (Richard Gurney and Thoman Cook), and London hall-marks for 1735.

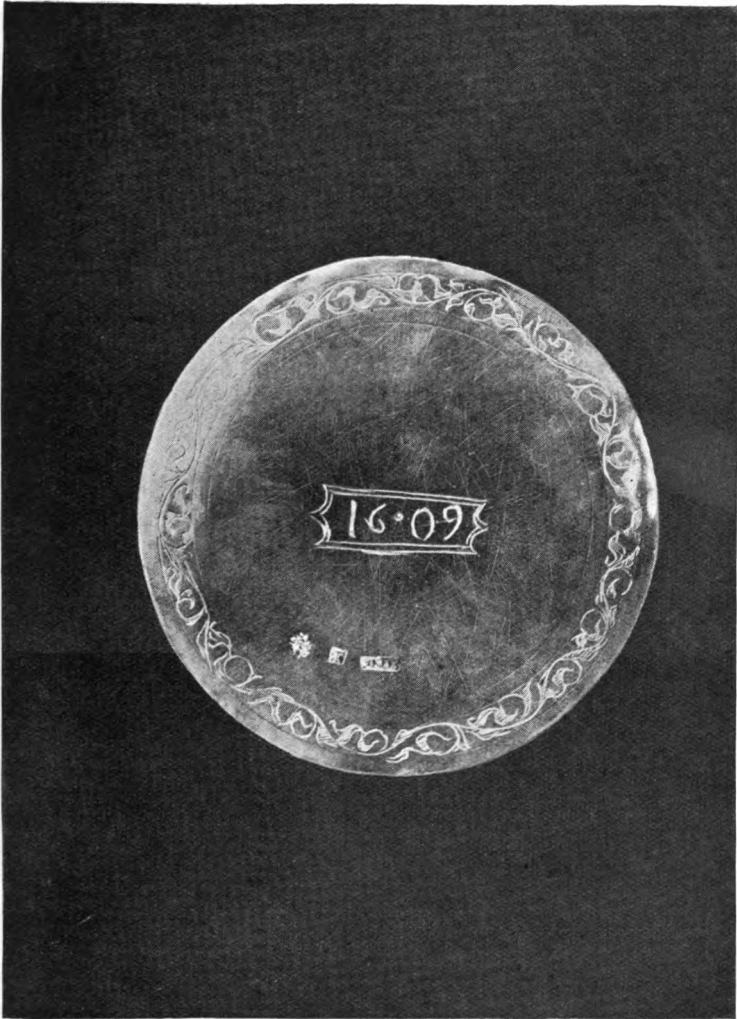
Alms Dish.—Brass. 10 in. diameter.

Examined 1914 and 1915.

J. F. CHANTER.

THE DEVONSHIRE PORTION OF THE RURAL DEANERY OF TRIGG MAJOR.

Five Devonshire parishes, Broadwoodwiger, S. Giles in the Heath, and Virginstow on the eastern side of the Tamar, North Petherwyn and Werrington on the western side of the Tamar, now form part of the Rural Deanery of Trigg Major in the Diocese of Truro. There is also the



PATEN. YARNSCOMBE.
BY T. MATTHEW, OF BARNSTAPLE.

CHURCH PLATE REPORT.—*To face page 182.*

parish of Boyton, a portion of which is in Devon, and as its plate has been mixed up with that of Tetcott and Luffincot in the Deanery of Holsworthy it has been thought desirable to include it in this report.

For all particulars of these parishes I am indebted to Canon H. Holroyd Mills, of S. Stephen-in-Brannel, whose excellent photographs and accurate dimensions of the plate has made a personal inspection quite unnecessary. There are Elizabethan chalices, all with their covers, at Broadwoodwiger, Virginstow, and Werrington, all of them of the Exeter type, and with the concave lip, which is so characteristic of so many of the Exeter chalices of the early Elizabethan period. One is by John Jones, another has the mark I V , which I would ascribe to John Averie of Exeter, and the third has no marks. North Petherwyn has a fine chalice parcel-gilt in the modern mediæval style, elaborately ornamented with precious stones. It is reported that the old church plate of this parish was sold during the incumbency of the Rev. T. B. Trentham, when the existing set was procured.

The patens, apart from those that are chalice covers, present no points of interest. The oldest is 1699 at Boyton.

The only flagon of any interest is that at Broadwoodwiger, of which unfortunately I have few particulars, as Canon Mills did not see it when he inspected the plate there, and it was only subsequent inquiries that brought it to light. It is a squat domestic tankard of the seventeenth century.

The most interesting alms dish is the taster or sweet-meat dish which is described among the plate of Luffincot in the Deanery of Holsworthy, which I understand really belongs to Boyton.

BOYTON.

Chalice.—A plain and badly proportioned piece of the late seventeenth century. $8\frac{3}{8}$ in. high; bowl conical, $4\frac{1}{8}$ in. diameter, $3\frac{5}{8}$ in. deep; stem is too long in proportion, and has a small knop; foot, $4\frac{5}{8}$ in. diameter.

Marks: **K**, punched three times, the first one double-struck.

Inscription: "Parochia de Boyton Com Cornubiae."

Paten.—On foot with gadroon border to plate. $6\frac{3}{8}$ in. diameter, $1\frac{1}{4}$ in. high; foot, 2 in. diameter.

Marks : maker, **Ro** (Philip Rolles), and London hall-marks for 1699. (Courthand D.)

Arms : Impaled dexter. Or, a fesse gules, a flasque erm. a mullet for difference (Hoblyn). Sinister party per fesse a pale all counter charged, arg. and gules, three shamrocks (Symons).

For Flagon and Alms Dish : see Luffincot and Tetcott (Deanery of Holsworthy).

BROADWOODWIGER.

Chalice.—Elizabethan, with cover, parcel-gilt, Exeter type, with usual concave lip. Height, $7\frac{1}{2}$ in. ; bowl, 4 in. diameter, $4\frac{3}{8}$ in. deep, with narrow band of hit-and-miss work round lip, a band of strapwork and arabesques round centre, and a fillet with egg ornament at base ; stem, which has at top and bottom fillets with dot ornamentation, is composed of the two uneven-sized spools as found in the Cotton chalices ; foot, $3\frac{5}{8}$ in. diameter, with tongue ornamentation.

Mark : **V I** (see Eggesford chalice). I am inclined, bearing in mind the date on cover, 1576, to inscribe this mark to John Averie of Exeter, as mark may read **I A** or **I Λ**.

Cover to fit. Height, $1\frac{1}{8}$ in. Has arabesque ornamentation, and on its foot, $1\frac{1}{8}$ in diameter, is the date 1576, with arabesque ornamentation.

No marks. (See illustration to face p. 112.)

Flagons.—A. A squat domestic tankard of seventeenth century. $7\frac{1}{2}$ in. high.

Inscription : "The gift of Richard Seccombe, June 9th 1794."

B. A pewter flagon. $12\frac{1}{8}$ in. high, 4 in. diameter at lid, $5\frac{7}{8}$ in. at base.

Alms Dishes.—A. Pewter bowl. 8 in. diameter.

B. Pewter plate or dish. $9\frac{3}{8}$ in. diameter.

S. GILES IN THE HEATH.

Chalice.—Georgian type. $6\frac{1}{4}$ in. high ; bowl, $3\frac{1}{2}$ in. diameter, $3\frac{3}{8}$ in. deep ; foot, 3 in. diameter.

Marks : maker, indistinct, and London hall-marks for 1729.

Patens.—A. Forms cover to chalice. Height, 1 in. diameter, $4\frac{7}{16}$ in. ; foot, $1\frac{1}{8}$ in. diameter.

No marks.

Inscription : "S^t Gile jn ye Heath 1730."

B. Plain gilt. 6 in. diameter.

Marks : maker, T C E C, and London hall-marks for 1871.

Inscription : "I H S", &c.

NORTH PETHERWYN.

Chalice.—Modern mediæval style, parcel-gilt. $6\frac{7}{8}$ in. high ; bowl, $4\frac{1}{8}$ in. diameter, $2\frac{5}{16}$ in. deep ; is set with four large precious stones ; stem has large knop, consisting of a large crystal inside and four large and four small stones round its centre ; also eight smaller ones above and below ; base, $5\frac{1}{8}$ in. diameter, has twelve stones.

Marks : maker, J. B, and London hall-marks for 1871.

Patens.—A. Modern mediæval style. 6 in. diameter. In the depression is a cross with a pelican in its piety in the centre, and I. H. S at the extremity of each arm.

Marks : as on chalice.

B. Plain plate. $6\frac{3}{4}$ in. diameter.

Flagons.—A. Mediæval style, silver and glass. $9\frac{1}{8}$ in. high, set with four stones.

B. A pewter tankard. $11\frac{1}{4}$ in. high, $4\frac{1}{8}$ in. diameter at lid, $6\frac{3}{4}$ in. at foot.

Alms Dishes.—A. Pewter bowl. $9\frac{1}{2}$ in. diameter, $2\frac{1}{2}$ in. high.

B. Pewter bowl. $6\frac{5}{8}$ in. diameter, $2\frac{1}{4}$ in. high.

The old set of vessels is reported to have been sold, when the new plate was procured, during the vicariate of the Rev. T. B. Trentham.

VIRGINSTOW.

Chalices.—A. Elizabethan, with its cover. Exeter type, but without the usual concave lip. A somewhat poor example of the work of John Jones of Exeter. Height, $5\frac{5}{8}$ in. ; bowl almost bell-shape, $3\frac{1}{8}$ in. diameter, 3 in. deep, with band of strapwork not interlacing, and arabesques $\frac{1}{2}$ in. wide ; foot, 3 in. diameter, with slight ornamentation.

Marks : (i.) IONS ; (ii.) Exeter town mark (X crowned) ; (iii.) B.

Cover to fit. Height, $1\frac{1}{4}$ in. high ; foot, $1\frac{1}{4}$ in. diameter, ornamented with arabesque foliation, but no strapwork ; on the foot is date 1576.

Marks : as on chalice.

B. Small. Modern, silver.

Patens.—A. Cover to chalice A, see above.

B. To match chalice B.

Flagon.—Small. Modern.

WERRINGTON.

Chalices.—A. Elizabethan, with its cover. Exeter type, with usual concave lip, but no makers, or other marks. $6\frac{1}{2}$ in. high ; bowl conical, $3\frac{1}{2}$ in. diameter, $3\frac{3}{4}$ in. deep, with narrow band of wavy horizontal lines between two straight lines round the lip, and a second band of interlacing strapwork and arabesque foliation round centre ; stem of usual type, with knop and fillets at top and bottom ornamented with dots and tongue ornamentation ; foot, $3\frac{3}{8}$ in. diameter, with tongue ornamentation.

No marks.

Cover to fit. 1 in. high, with band of strapwork with hit-and-miss ornamentation ; foot, $1\frac{3}{8}$ in. diameter, with Tudor rose.

No marks.

B. Modern mediæval style. $8\frac{3}{16}$ in. diameter ; bowl, 4 in. diameter, $2\frac{3}{4}$ in. deep ; foot, $5\frac{1}{2}$ in. diameter.

Marks : maker, S B. F W, and London hall-marks for 1894.

Patens.—A. Cover to chalice A, see above.

B. To match chalice B. $6\frac{1}{2}$ in. diameter.

Marks : as on chalice B, but date letter is 1896.

C. Electro-plated. $5\frac{5}{8}$ in. diameter.

D. Plain on foot. $5\frac{5}{8}$ in. diameter ; height, $1\frac{3}{4}$ in. ; foot, 3 in. diameter.

No marks. ? Electro-plate.

Flagon.—Electro-plate. $7\frac{3}{8}$ in. high.

Alms Dish.—I. $12\frac{3}{8}$ in. diameter.

Marks : maker, J. S. H, and London hall-marks for 1885.

Inscription : " St Martin's Werrington. To the glory of God and in memory of William Milnes of Yeolmbridge, who fell asleep Nov. 28th 1885."

J. F. CHANTER.

PARRACOMBE, *March*. 1916.

EIGHTH REPORT OF THE BOTANY COMMITTEE.

EIGHTH REPORT of the Committee—consisting of Miss Rose E. Carr-Smith, the Hon. Mrs. Colborne, Miss C. E. Larter, Mr. C. H. Laycock, Rev. A. C. Morris, Mr. H. G. Peacock, Miss C. Peck, Dr. A. B. Prowse, Mr. A. Sharland, and Mr. W. P. Hiern (Secretary), with power to add to their number—for the purpose of investigating matters connected with the Flora and Botany of Devonshire.

Edited by W. P. HIERN.

(Read at Plymouth, 19th July, 1916.)

Ænanthe crocata L. Flower-head deformed; pedicels shortened and somewhat thickened; rarely all are affected with the galls, which are new to Britain and caused by *Philænus spumarius*. Devon, Dorset and Surrey (E. W. Swanton, 1912. See *Journal of Botany*, 1916, p. 26).

1. BARNSTAPLE BOTANICAL DISTRICT.

Helleborus viridis L. Hartland; perhaps the result of the ancient cultivation of medicinal herbs (Mr. R. P. Chope).

Lepidium heterophyllum Benth., var. *canescens* Gren. & Godr. Braunton.

Raphanus Raphanistrum L. Combe Martin, 1904 (Miss Larter).

Viola arvensis Murr., var. *V. obtusifolia* Jord. Goodleigh.

Lychnis alba × *dioica*; apparently this hybrid (Rev. E. S. Marshall). Braunton.

Alsine rupicola Hiern. Morte-hoe.

A. marina Wahl. Ashford. Fremington.

Tilia europæa L., cultivated, galled with *Contarinia tiliarum* Kieffer. Pilton, East.

Geranium Endressi J. Gay. Landkey, garden escape? (Mr. Hart).

Trifolium procumbens L., var. *majus* Koch. Ilfracombe. Stoke Rivers.

Lotus uliginosa Schk., var. *glabra* Bréb. Bideford.

- Prunus Padus* L. Arlington (? planted).
Rosa spinosissima L. Bideford.
Sorbus minima $\times$ *latifolia* ? Watersmeet, June, 1906, gathered by the late Rev. A. Ley (Rev. E. S. Marshall in *Journ. Bot.*, 1916, p. 14).
Oenothera ammophila Focke. Braunton. Probably this species (Rev. E. S. Marshall in *Journ. Bot.*, 1916, p. 140).
Sedum album L. Northam.
Rubia peregrina L. Welcombe.
Matricaria suaveolens Buchen. Bideford.
Artemisia maritima L., var. *pseudo-gallica*. Braunton (Rev. E. S. Marshall).
Lithospermum officinale L., a broad-leaved form, but different from var. *pseudo-latifolium* C. E. Salm. Braunton (Rev. E. S. Marshall *l.c.* p. 141).
Hyoscyamus niger L. Barnstaple ; garden-weed.
Euphrasia curta Wettst., var. *glabresceas* Wettst. Braunton (Rev. E. S. Marshall *l.c.* p. 141).
E. occidentalis Wettst. Braunton (Rev. E. S. Marshall *l.c.* p. 141).
Anagallis arvensis L., var. *A. cærulea* Schreb. Kentisbury.
Littorella uniflora Aschers. Bideford.
Suæda maritima Dumort., var. *flexilis* Rouy. Tawstock.
Salicornia dolichostachya Moss. Braunton (Rev. E. S. Marshall *l.c.* p. 141). Ashford. Pilton, West. Fremington. West-leigh.
S. dolichostachya $\times$ *herbacea* ? Braunton (Rev. E. S. Marshall). Heanton Punchardon.
S. herbacea L., forma *patula*. Braunton (Rev. E. S. Marshall *l.c.* p. 141).
S. ramosissima Woods. Braunton (Rev. E. S. Marshall *l.c.* p. 141). Ashford. Fremington.
S. gracillima Moss. Ashford. New record for Devon : see Rev. E. S. Marshall *l.c.* p. 141.
S. prostrata Pallas, var. *Smithiana* Moss & Salisbury. Braunton (Rev. E. S. Marshall *l.c.* p. 141). Northam.
S. disarticulata Moss. Ashford.
Botrychium Lunaria L. Morte-hoe (Mrs. G. B. Longstaff).
Trentepohlia aurea Mart. Welcombe.

The following list of fresh-water ALGÆ, mostly collected by Mr. F. A. Brokenshire, of Barnstaple, is contributed by him, in continuation of last year's list. The classification

is in accordance with that of G. S. West in his treatise on the British Fresh-water Algæ (1904):—

Batrachospermum vagum (Roth) Ag. Bideford (Rev. G. Warren).

Bulbochæte rectangularis Wittrk. Bideford.

Herposteiron confervicola Näg. Braunton.

Myxonema tenue (Ag.) Rabenh. Challacombe.

Draparnaldia plumosa (Vauch.) Ag. Sherwill. Bratton Fleming.

D. glomerata (Vauch.) Ag. Challacombe.

Microthamnion Kützingerianum Näg. Bideford.

M. strictissimum Rabenh. Challacombe.

Vaucheria sessilis DC. Bishop's Tawton.

Mougeotia gracillima Hass. Challacombe.

M. genuflexa (Dillw.) Ag. Braunton.

Zygnema ericetorum de Bary. Challacombe. Identified by Rev. T. Read.

Z. leiospermum de Bary. Challacombe. Identified by Rev. T. Read.

Spirogyra tenuissima (Hass.) Kütz. Challacombe.

S. inflata (Vauch.) Rabenh. Challacombe.

Gonium pectorale Müll. Braunton.

Volvox globator L. Bishop's Tawton (Mr. J. Hicking). Parkham (Rev. J. Warren).

Pediastrum Boryanum (Turp.) Menegh. Braunton. Bideford.

Cœlastrum sphaericum Näg. Bideford.

C. cubicum (Näg.) Archer. Bideford.

Ankistrodesmus falcatus (Corda) Ralfs. Braunton. Challacombe.

Palmodactylon varium Näg. Challacombe. Bratton Fleming.

Apiocystis Brauniana Näg. Ilfracombe.

Ophiocytium Arbuscula (A. Br.) Rabenh. Braunton.

Tribonema bombycinum (Darb. & Sol.) West. Bishop's Tawton.

Hapalosiphon intricatus West. Challacombe.

Tolypothrix lanata (Desv.) Wartm. Braunton.

Oscillaria tenuis Ag. Challacombe.

O. limosa Ag. Ilfracombe.

Chroococcus turgidus Näg. Challacombe.

The following list of UREDINALES appeared in a paper contributed to *The Journal of Botany* for February, 1916, pp. 52-4, by Mr. Norman G. Hadden ; the specimens were

obtained by him in the immediate neighbourhood of Lynton, unless otherwise stated, during July and August, 1915 :—

Uromyces valerianæ Fekl. Abundant.

U. flectens Lagerh. On *Trifolium repens* L. ; not common.

U. striatus Schröt. On *Trifolium procumbens* L. Hollerday Hill and Lynbridge Lane. Apparently the first British stations on this host.

U. fabæ De Bary. On *Lathyrus pratensis* L. ; uncommon.

• *U. orobi* Lév. On *Orobis tuberosus* L. Lynbridge.

U. rumicis Wint. Common.

Puccinia virgaureæ Lib. Summerhouse Hill ; rare.

P. expansa Link. On *Senecio Jacobæa* L. ; not uncommon.

P. carlinæ Jacky. Countisbury Hill ; rare.

P. tinctoriæ Magn. On *Serratula tinctoria* L. Lee Bay ; rare.

P. centaureæ DC. On *Centaurea nigra* L. ; common.

P. cnici-oleracei Pers. On *Carduus lanceolatus* L. ; not uncommon.

P. obtegens Tul. Common.

P. lapsanæ Fekl. Common.

P. hypochæridis Oud. Very abundant.

P. chondrillæ Corda. On *Lactuca muralis* Fresen. Lynbridge Lane.

P. taraxaci Plowr. Abundant.

P. crepidis Schröt. On *Crepis virens* auct. Near the railway station and near Brendon ; rare.

P. hieracii Mart. On *Hieracium murorum* L. ; abundant.

P. difformis K. & S. On *Galium Aparine* L., æcidia and teleutospores. Near Cheriton.

P. menthæ Pers. On *Mentha aquatica* L. and *Satureia Calamintha* Scheele ; common.

P. glechomatis DC. On *Nepeta hederacea* Trev. Lynmouth ; rare.

P. annularis Schl. On *Teucrium Scorodonia* L. Lee Woods and Model Gate ; rare.

P. hydrocotyles Cooke. On *Hydrocotyle vulgaris* L. Braunton Burrows.

P. saniculæ Grev. Woody Bay Woods ; not common.

P. pimpinellæ Mart. On *Pimpinella Saxifraga* L. Lydiate Lane ; rare.

P. conii Fekl. On *Conium maculatum* L. Bishop's Tawton.

- P. circæa* Pers. On *Circæa lutetiana* L. Watersmeet and Lee Woods.
- P. violæ* DC. Abundant.
- [*P. Fergussoni* Berk. & Br. On *Viola palustris* L. Exmoor ; rare.]
- P. malvacearum* Mont. On *Malva sylvestris* L. ; common.
- P. umbilici* Guep. On *Cotyledon Umbilicus* L. ; very local.
- P. lychnidearum* Link. On *Lychnis diurna* Mill. ; common.
- " " forma *arenariæ* Schum. On *Stellaria Holostea* L. Lynbridge.
- P. acetosæ* Körn. On *Rumex Acetosa* L. ; not uncommon.
- P. obscura* Schröt. *Æcidia* on *Bellis perennis* L. Hollerday Hill.
- P. oblongata* Wint. On *Luzula maxima* DC. Lee Woods.
- P. caricis* Reb. On *Carex pendula* Huds., etc. Lyndale [and Exmoor].
- P. graminis* Pers. On various grasses ; common.
- P. coronata* Corda. On *Holcus mollis* L.
- P. poarum* Niels. *Æcidia* on *Tussilago Farfara* L. ; not uncommon.
- Phragmidium fragariastris* Schröt. Not uncommon.
- Ph. disciflorum* Jones. On *Rosa arvensis* Huds. ; common.
- Ph. violaceum* Wint. On *Rubus fruticosus* L. ; abundant.
- Ph. rubi-idæi* Karst. On *Rubus Idæus* L. ; not common.
- Kuehneola albida* Magn. On *Rubus fruticosus* L. Near Watersmeet.
- Cronartium quercuum* Miyabe. On *Quercus Ilex* L. Hollerday Hill ; rare.
- Coleosporium senecionis* Fr. On *Senecio vulgaris* L. and *S. sylvaticus* L. ; common.
- C. tussilaginis* Tul. On *Tussilago Farfara* L. Hollerday Hill.
- C. petasitis* Lév. On *Petasites ovatus* Hill. Dean.
- C. euphrasiæ* Wint. On *Euphrasia officinalis* L. and *Rhinanthus Crista-galli* L. ; common.
- C. melampyri* Kärst. On *Melampyrum pratense* L. ; not uncommon.
- Melampsora larici-caprearum* Kleb. On *Salix caprea* L. Woody Bay.
- M. euphorbiæ* Cast. On *Euphorbia hyberna* L. East Lyn Valley ; rare.
- M. hypericorum* Wint. On *Hypericum Androsæmum* L. ; not uncommon.

M. lini Desm. On *Linum catharticum* L. Hollerday Hill.

Melampsoridium betulinum Kleb. Common.

Pucciniastrum agrimonice Tranz. Hollerday Hill ; rather rare.

Milesina dieteliana Magn. On *Polypodium vulgare* L. ; uncommon.

M. blechni Sydow. On *Blechnum Spicant* With. Watersmeet ; rare.

M. scolopendrii Schröt. On *Scolopendrium vulgare* L. ; not rare.

MYCETOZOA obtained within a two-mile radius of Lynton, during the months of July and August, 1915 ; list supplied by Mr. Norman G. Hadden :—

Ceratomyxa fruticulosa Macbr.

Badhamia utricularis Berk.

Physarum psittacinum Ditm.

P. viride Pers.

P. nucleatum Rex. ; the second British gathering of this rare species.

P. nutans Pers., and subsp. *leucophæum* Lister.

P. cinerum Pers.

P. sinuosum Weinm.

P. bitectum Lister.

P. conglomeratum Rost.

Fuligo septica Gmel.

Craterium minutum Fr.

C. leucocephalum Ditm.

C. aureum Rost.

Leocarpus fragilis Rost.

Diderma hemisphericum Hornem.

D. effusum Morg.

D. floriforme Pers. ; a rare and local species.

Didymium diffforme Duby.

D. dubium Rost. ; previously only recorded from Dorset, Scotland, and Bohemia.

D. Clavus Rost.

D. nigripes Fr., and var. *xanthopus* Lister ; very abundant.

D. squamulosum Fr.

D. melanospermum Macbr.

D. crustaceum Fr. ; a rare British species.

Mucilago spongiosa Morg.

Colloderma oculatum G. Lister ; a rare and remarkable species.

- Stemonitis fusca* Roth.
S. splendens Rost., var. *flaccida* Lister.
S. herbatica Peck.
S. ferruginea Ehrenb.
S. flavogenita Jahn.
Comatricha nigra Schr.
C. elegans Lister ; a remarkably fine development of this scarce species.
C. laxa Rost. ; plentiful.
C. typhoides Rost.
C. pulchella Rost.
Enerthenema papillatum Rost.
Lamproderma arcyronema Rost.
L. scintillans Morg.
Cribraria argillacea Pers.
C. aurantiaca Schrad. ; abundant.
Dictydium cancellatum Macbr., and var. *fuscum* Lister.
Tubifera ferruginosa Gmel.
Enteridium olivaceum Ehrenb., var. *liceoides* Lister ; rare.
Reticularia Lycoperdon Bull.
Lycogala epidendrum Fr.
Trichia persimilis Karst.
T. varia Pers.
T. decipiens Macbr.
T. Botrytis Pers.
Arcyria denudata Sheldon.
A. cinerea Pers.
A. pomiformis Rost.
A. incarnata Pers.
A. nutans Grev.

2. TORRINGTON BOTANICAL DISTRICT.

- Ranunculus triphyllus* Wallr. Ashwater (Rev. H. H. Harvey).
Geranium columbinum L. Sampford Courtenay (Rev. A. C. Morris).
Lotus uliginosa Schk., var. *glabra* Bréb. Weare Giffard.
Vicia Orobus DC. Okehampton (the late Mr. J. D. Prickman).
Lathyrus montana Bernh., var. *tenuifolia* Roth. Huntshaw.
Sanguisorba officinalis A. Gray. Okehampton, August, 1855
 (Miss Gill).

144 EIGHTH REPORT OF THE BOTANY COMMITTEE.

- Rubus insericatus* P. J. Müll. Okehampton (Mr. J. Cumming).
R. pallidus Weihe & Nees, var. *fuscus* Focke. Okehampton (Mr. J. Cumming).
R. rubescens Lej., var. *infecundus* (Rogers). Okehampton (Mr. J. Cumming).
R. plinthostylus Genev. Okehampton (Mr. J. Cumming).
R. Bellardi Weihe & Nees. Okehampton (Mr. J. Cumming).
R. hirtus Waldst. & Kit., forma. Okehampton (Rev. J. Cumming).
Anthemis nobilis L. Hatherleigh (Rev. A. C. Morris).
Leonurus Cardiacæ L. Jacobstowe (Rev. A. C. Morris).
Primula vulgaris Huds., var. *caulescens* Koch. Exbourne (Rev. A. C. Morris).
Salix triandra L. Huntshaw.
Populus nigra L.; petioles galled with the Homoptera, *Pemphigus spirothecæ* Pass. Weare Giffard.
Typha angustifolia L. Bude Canal (Rev. H. H. Harvey).
Ceterach officinarum DC. Alverdiscot.
Leucodon sciuroides Schwaeg. Clawton (Rev. H. H. Harvey).
Volvox globator L. Huntshaw (Mr. F. A. Brokenshire).
Amanita aspera Pers. Sampford Courtenay (Miss K. M. Denmeade); new record for Devon.
Phragmidium acuminatum (Fr.). Okehampton, on *Sanguisorba officinalis* A. Gr. Miss Gill in E. Parfitt's collection at Torquay (Miss Larter).

3. SOUTH MOLTON BOTANICAL DISTRICT.

- Aconitum Napellus* L. Molland (Rev. E. S. Marshall).
Geranium phæum L. West Buckland (Mr. F. A. Brokenshire).
Rhamnus Frangula L. North Molton.
Agrimonia odorata Mill. North Molton. Molland. Twitchen.
Rubus leucostachys × *ulmifolius* (*R. lasiostachys* Focke). North Molton.
Galium uliginosum L. Bishop's Nympton. South Molton. North Molton.
Valerianella carinata Loisel. Shobrooke.
Mimulus moschatus Dougl. North Molton.
Agrostis setacea Curt. North Molton.
Glyceria declinata Bréb. East Anstey (Rev. E. S. Marshall).
Bromus giganteus L. East Anstey (Rev. E. S. Marshall).

4. EXETER BOTANICAL DISTRICT.

- Fumaria Boræi* Jord., forma *rubens* Pugsl. Kenton (Rev. E. S. Marshall).
Silena anglica L. Kenton (Rev. E. S. Marshall).
Thlaspi arvense L. Kenton (Rev. E. S. Marshall).
Epilobium hirsutum $\times$ *palustre*. Alphington.
Ænothera ammophila Focke, probably. Kenton (Rev. E. S. Marshall).
Borago officinalis L. Kenton (Mrs. Wainwright, per Miss Larter), not native.
Scrophularia aquatica L. Cullompton.
Lasiopera viscosa Hoffm. & Link. Kenton (seeds minute, resembling Cayenne pepper, Rev. E. S. Marshall).
Lycopus europæus L. Cullompton.
Chenopodium murale L. St. Thomas.
Phalaris arundinacea L. Cullompton.

5. HONITON BOTANICAL DISTRICT.

- Ranunculus Baudotii* Godr. Otterton (Mr. G. T. Harris).
Diplotaxis tenuifolia DC. Otterton (Mr. G. T. Harris).
Viola hirta L. Branscombe (Mr. G. T. Harris).
Silene noctiflora L. Otterton (Mr. G. T. Harris).
Geranium Robertianum L., var. *trilobatum* H. Takeda. Ottery St. Mary (Mr. Takeda).
Lathyrus Aphaca L. Seaton (Rev. E. S. Marshall).
Rubus argenteus Weihe & Nees. Woodbury (Mr. J. Cumming).
R. Newbouldii Bab. (= *R. insericatus* P. J. Müll.). Woodbury (Mr. J. Cumming).
R. foliosus Weihe & Nees. Honiton (Mr. A. Sharland).
R. plinthostylus Genev. Woodbury (Mr. J. Cumming).
Epilobium hirsutum $\times$ *parviflorum*. Sowton.
Claytonia perfoliata Donn. Sidmouth (Mr. G. T. Harris).
Erigeron acris L. Branscombe (Mr. G. T. Harris).
Inula. Helenium L. Between Seaton and Lyme Regis (Miss C. M. Clifford, July, 1904) ; perhaps garden-escape.
Achillea Millefolium L., var. *lanata* Koch. Sidmouth (Mr. G. T. Harris).
Carduus pratensis Huds. Harpford (Mr. G. T. Harris).
Arctostaphylos Uva-ursi Spr. Cliffs, High Peak, from bird-carried berry ? (Mr. G. T. Harris).

Euphrasia nemoralis Pers., var. *ciliata*. Woodbury (Dr. Drabble).

Rumex pulchra L. Branscombe (Mr. G. T. Harris).

Salicornia dolichostachya $\times$ *herbacea* Moss. Budleigh Salterton.

Polygonum Convolvulus L., var. *subalatum* v. Hall. Ottery St. Mary (Mr. G. T. Harris).

Carex canescens L. Sidbury (Mr. G. T. Harris).

C. pallescens L. Branscombe (Mr. G. T. Harris).

Glyceria distans Wahlb., rather untypical. Seaton (Rev. E. S. Marshall).

Equisetum sylvaticum L. Budleigh Salterton (Herb. W. S. Hore).

Nitella flexilis Ag. Harpford (Mr. G. T. Harris).

Pteromonas angulosa (Carter) Dangeard. Ottery St. Mary (H. Takeda): see *Journ. Bot.*, 1916, p. 7.

6. TORQUAY BOTANICAL DISTRICT.

Papaver dubium L., var. *P. Lamottei* Bor. St. Mary Church (Miss Larter).

Fumaria Boræi Jord., forma *rubens* Pugsl. West Dawlish (Rev. E. S. Marshall).

Cardamine pratensis L., *flore pleno*. St. Mary Church (Mrs. Daniel).

Raphanus maritimus Sm. West Dawlish (Rev. E. S. Marshall).

Viola sylvestris Lam., var. *punctata* Rouy & Fouc. Chudleigh.

V. Riviniana Reichenb., var. *diversa* Greg. Hennock.

V. canina $\times$ *Riviniana* Greg. Coffinswell (Miss Peck).

V. arvensis Murr., var. *V. agrestis* Jord. Stokeinteignhead (Miss Peck).

Silene angustifolia Guss.; many plants infected with smut, *Ustilago antherarum* Fr., presenting a dark colour to the flowers. Tormoham (Miss Larter).

Arenaria leptoclados Guss., var. *viscidula* Rouy & Fouc. Stokeinteignhead (Miss Peck).

Lavatera arborea L. West Dawlish.

Hypericum linarifolium Vahl. Drewsteignton, 18 Sept., 1915 (Miss H. E. Pratt).

H. hirsutum L. Kingskerswell (Miss Larter).

H. montanum L. Stokeinteignhead (Miss Larter).

Acer campestre L.; the leaves galled by *Eriophyes macrochelus* Nal., var. *erinea* Trotter; the gall new to Britain. Newton Abbot, July, 1915 (E. W. Swanton, in *Journ. Bot.*, 1916, p. 25).

- Geranium pyrenæicum* Burm. f. Tormoham, casual (Miss Larter).
- G. lucidum* L.; the leaves galled by *Eriophyes geranii* Can.; the gall new to Britain. Newton Abbot, 1912, abundant (E. W. Swanton, *loc. cit.*).
- Euonymus europæus* L.; the leaves galled by *Eriophyes convolvens* Val.; the gall new to Britain. Newton Abbot, 1912 (Mr. Samuel Mason *ex* E. W. Swanton, *loc. cit.*).
- Ononis reclinata* L. Tormoham, 15 May, 1904, and 19 May, 1916 (Miss C. M. Clifford).
- Lotus corniculata* L., var.; leaves and flowers all in a drooping bunch at the extremity of a woody stem, 30 to 45 cm. in length, projecting from earthy rubble, where the limestone has been cut. St. Mary Church, seen in three stations of exactly the same character, but never except in such (Miss Larter).
- L. tenuis* W. & K. Wolborough (Miss Larter). Brixham; not erect (Mr. Druce).
- L. uliginosa* Schk., var. *glabra* Bréb. St. Mary Church and Tormoham (Miss Larter).
- Vicia bithynica* L., var. *angustifolia* Syme. Dawlish (Rev. A. C. Morris).
- Agrimonia Eupatoria* L., perhaps the var. *sepium* Bréb.; plant measuring 3 m. from bottom of stem to the top; one of the lower leaves 4½ dm. in length. Coffinswell, 17 August, 1915 (Miss Larter).
- Epilobium obscurum* × *parviflorum*; West Dawlish; with the parents, a good intermediate (Rev. E. S. Marshall in *Journ. Bot.*, 1916, p. 140).
- Oenothera ammobila* Focke, apparently. West Dawlish (Rev. E. S. Marshall, *loc. cit.*).
- Saxifraga granulata* L., *flore pleno*. Paignton, 16 May, 1907, and 17 May, 1916, increasing; not native (Miss K. M. Denmeade).
- Galium Mollugo* L., with fasciculate flowers. St. Mary Church (Miss Larter). Also at Newton Abbot the same species, with the margins of the leaves rolled and bent by attack of the gall, *Eriophyes galii* Karp. (E. W. Stanton, in *Journ. Bot.*, 1916, p. 29).
- G. ochroleucum* Kit. At St. Mary Church this hybrid continued last year, as since 1912, to blossom true to date (about July 11); last year new patches of it were found in the next combe, and also on a limestone hill, a good distance from the original station (Miss Larter).
- G. uliginosum* L. Stokeinteignhead (Miss Larter).

Rubia peregrina L. ; apical whorl of leaves undeveloped forming a greenish globular gall, 8×4 mm., which becomes black in drying ; caused by *Eriophyes rubiæ* Can. St. Mary Church, 1912 (E. W. Swanton in *Journ. Bot.*, 1916, p. 26).

Valerianella rimosa Bast. Stokeinteignhead (Miss Peck).

Erigeron acris L. West Dawlish (Rev. E. S. Marshall).

Centaurea nigra L., with white flowers. St. Mary Church (Mr. R. Stanton).

C. Seabiosa L., cf. var. *Angusiensis* F. N. Williams. St. Mary Church and Tormoham (Miss Larter).

Convolvulus silvatica Choisy. St. Mary Church, not native (Miss Larter).

Cuscuta trifolii Bab. Stokeinteignhead (Miss Peck).

Borago officinalis L. Throwleigh, not native (Mrs. Wainwright).

Euphrasia nemorosa H. v. Mart. West Dawlish (Rev. E. S. Marshall).

E. Rostkoviana Hayne. West Dawlish (Rev. E. S. Marshall).

Satureia Calamintha Scheele, var. *Briggsii*. Stokeinteignhead (Miss Peck).

S. Acinos Scheele. St. Mary Church (Miss Larter).

Galeopsis Ladanum L. St. Mary Church and Stokeinteignhead (Miss Larter).

Phlomis fruticosa L. Tormoham, in one station falling for 18 m. over seaward limestone cliffs in a cataract of bloom ; probably an escape from neighbouring gardens in which it is abundant (Miss Larter).

Statice binervosa G. E. Sm. West Dawlish (Rev. E. S. Marshall).

Suaeda maritima Dumort., var. *flexilis* Rouy. West Dawlish.

Salicornia perennis Mill. West Dawlish.

S. dolichostachya Moss. West Dawlish (Rev. E. S. Marshall in *Journ. Bot.*, 1916, p. 141).

S. herbacea L. West Dawlish.

S. ramosissima Woods. West Dawlish (Rev. E. S. Marshall, loc. cit.).

S. prostrata Pallas, var. *Smithiana* Moss & Salisbury. West Dawlish (Rev. E. S. Marshall).

S. disarticulata Moss. West Dawlish (Rev. E. S. Marshall).

S. disarticulata Moss, var. *humifusa* E. S. Marshall in *Journ. Bot.*, 1915, p. 362. West Dawlish.

S. disarticulata var. *humifusa* $\times$ *Smithiana* E. S. Marshall, loc. cit., p. 363. West Dawlish.

- Polygonum Raii* Bab. West Dawlish (Rev. E. S. Marshall).
P. maritimum L. Dawlish (Rev. E. S. Marshall). Teignmouth
 (Mr. E. W. Hunnybun).
Orchis Morio L. Paignton ; also an albino form, together with
 others in the same meadow, varying from palest mauve to
 deepest rose and purple (Miss K. M. Denmeade).
O. Fuchsii $\times$ *maculata* = *O. transiens* Druce. St. Mary Church
 (Miss Larter).
Zostera marina L., var. *stenophylla* Aschers. & Graebn. West
 Dawlish.
Scirpus filiformis Savi, var. *monostachys* (Hook. f.). St. Mary
 Church (Miss Larter).
Spartina stricta Roth. West Dawlish (Rev. E. S. Marshall).
Bromus racemosus L., var. *pubescens* Druce. St. Mary Church
 (Miss Larter).
Equisetum palustre, var. *polystachyum* Vill. St. Mary Church
 (Herb. W. S. Hore).
Ceterach officinarum DC. Highweek.

ALGA.

- Trentepohlia aurea* Mart. Kingskerswell (Miss Larter).

MUSCI.

- Rhacomitrium canescens* Brid. St. Mary Church ; quite a
 feature of one limestone hollow (Miss Larter).
Weisia crispa Mitt. St. Mary Church, close to the sea (Miss
 Larter).
Eurhynchium rusciforme Milde. Stokeinteignhead (Miss Larter).

FUNGI.

Miss K. M. Denmeade reports the three following
 Fungi :—

- Clitocybe maxima* Quél. Paignton.
Marasmius Rotula Fr. Paignton.
Helvella crispa Fr. Paignton.

The following list of FUNGI (Basidiomycetes) has been
 contributed by Mr. H. G. Peacock :—

- Amanita solitaria* Secr. Decoy, Newton Abbot, August, 1915.
Lepiota gracilentia Quél. Milber Down Woods, October, 1915.
L. amianthina Karst. Milber Woods, October, 1915.

150 EIGHTH REPORT OF THE BOTANY COMMITTEE.

- Tricholoma albobrunneum* Quél. Torquay, August, 1915.
T. vaccinum Quél. Milber Down Woods, October, 1915.
T. inamœnum Gill. Cockington Wood, August, 1915.
Clitocybe hirneola Quél. Dainton Down, July, 1915.
C. pithyophila Gill. Milber Woods, October, 1915.
C. maxima Quél. Milber Woods, October, 1915.
C. flaccida Quél. Milber Down Woods, October, 1915.
C. oblata Quél. Jalberton Tor, November, 1915.
C. laccata Quél. Wolborough, 6 August, 1915.
Mycena acicula Quél. Stoke Gabriel, November, 1915.
M. galopus Quél. Wolborough, 6 August, 1915.
M. vulgaris Quél. Cockington Wood, August, 1915.
Pleurotus revolutus Gill. Stoke Gabriel, November, 1915.
Leptonia lampropus Quél. Churston Common, November, 1915.
Inocybe eutheles Quél. Chapel Hill, Torquay, August, 1915.
Hebeloma fastibile Quél. Stoke Gabriel, November, 1915.
Psalliota arvensis Quél. Dainton Down, July, 1915.
P. silvatica Quél. Park Hill Copse, August, 1915.
Stropharia coronilla Quél. Brimley, November, 1915.
Hypholoma sublateritium Quél. Milber Down Woods, October, 1915.
Paxillus involutus Fr. Milber Down, July, 1915.
Hygrophorus russocoriaceus Berk. & Mill. Goodrington, November, 1915.
H. conicus Fr. Torquay, August, 1915.
Russula æruginea Fr. Stonelands, near Bovey Tracey, August, 1915.
Marasmius ramealis Fr. Decoy, Newton Abbot, August, 1915.
Boletus badius Fr. Milber Down, July, 1915.
Polyporus elegans Fr., var. *nummularius* Fr. Milber Down, July, 1915.
Lycoperdon gemmatum Batsch. Dainton Down, July, 1915.
L. pyriforme Schæff. Cockington Wood, August, 1915.
Scleroderma vulgare Hornem. Wolborough, 6 August, 1915.

URIDINEÆ (Mr. Norman G. Haddon).

- Uromyces loti* Blytt. On *Lotus corniculata* L. Paignton, October, 1915.
U. ervi Westen. On *Vicia hirsuta* S. F. Gray. Paignton, October, 1915.

- U. fabæ* De Bary. On *Vicia sepium* L. Torquay, October, 1915.
- U. behenis* Unger. On *Silene maritima* With. Meadfoot, October, 1915 (*Æcidia*).
- U. betæ* Lév. On *Beta maritima* L. Paignton, October, 1915.
- Puccinia lapsanæ* Fekl. On *Lapsana communis* L. Teignmouth, March, 1916.
- P. punctata* Link. On *Galium Mollugo* L. Paignton, October, 1915.
- P. valantiæ* Pers. On *Galium Cruciata* Scop. Paignton, October, 1915.
- P. glechomatis* DC. On *Nepeta hederacea* Trev. Cockington Wood, October, 1915.
- P. smyrnii* Corda. On *Smyrnum Olusatrum* L. Stoke Gabriel and Torquay, November, 1915.
- P. malvacearum* Mont. On *Malva sylvestris* L. Paignton, October, 1915.
- P. umbilici* Guep. On *Cotyledon Umbilicus* L. Paignton, November, 1915.
- P. iridis* Wallr. On *Iris foetidissima* L. Paignton, October, 1915.
- P. magnusiana* Körn. On *Phragmites communis* Trin. Broad-sands, October, 1915.
- Phragmidium fragariastrum* DC. On *Potentilla Fragariastrum* Ehrh. Paignton, November, 1915.

MYCETOZOA (Mr. Norman G. Haddon).

Lamproderma violaceum Rost. Paignton, October, 1915.

PHENOLOGICAL NOTES (Miss C. E. Larter, F.L.S.).

Among the plants that remained in flower in the neighbourhood of St. Mary Church latest into October and noted last year, as frequently in former years, were *Geranium dissectum* L., *Linum angustifolium* Huds., *Lapsana communis* L., and *Crepis capillaris* Wallr.

The season of 1916 at first promised to be an early one ; but frost and snow coming after the " mild spell " which distinguished its opening, caused the actual development of most plants to be unusually late. On January 20th *Chærophylllum temulum* L. was in full bloom, as were young plants of *Erodium cicutarium* L'Herit., and on February

16th *Ranunculus repens* L. On the same date, on a sheltered bank, *Viola hirta* L. and *Arenaria trinervia* L. were open; by February 20th also *Mercurialis perennis* L. The leaves of *Orchis mascula* L. were, on February 5th, well above the ground; on February 28th *Prunus insititia* L. was in full leaf. After this date everything appeared to be "set back."

7. PLYMOUTH BOTANICAL DISTRICT.

Polycarpon tetraphyllum L. Stokenham (Mrs. Wedgwood, and 20 August, 1915, Miss Larter).

Alsine rupicola Hiern. Stokenham (Miss Larter).

Lotus angustissima L. $\times$ *hispidus* Desf. = $\times$ *L. Davyæ* Druce. Stokenham. Lady Davy.

Comarum palustre L. Malborough (Dr. H. B. Guppy).

Rubus plinthostylus Genev. Ivybridge; perhaps a weakly armed form.

Bupleurum fruticosum L. Slapton; forming a hedge above a stone wall on the road ascending from the sands towards Dartmouth; not native (Miss Larter).

Rubia peregrina L., with apical gall, caused by *Eriophyes rubiæ* Can. Slapton. The gall is new to Britain (E. W. Swanton, in *Journ. Bot.*, 1916, p. 26).

Menyanthes trifoliata L. Stokenham. Thurlestone (Dr. H. B. Guppy).

Linaria vulgaris Mill., var. *latifolia* Bab. Blackawton, 20 August, 1915; a number of very fine plants, all standing, some a metre high; the broad leaves were placed on the stem with extraordinary closeness (Miss Larter).

Sibthorpia europæa L. West Alvington (Dr. H. B. Guppy).

Gallitrichum anglicum Jord. & Fourr., a "split" from *Salvia Verbenaca* L. Wembury: see *Journ. Bot.*, 1871, pp. 349, 350.

Polygonum maritimum L.; comes and goes on the beaches, but never permanently established (Dr. H. B. Guppy).

Endymion non-scriptum Garcke; a freak, with a leafy raceme 3 dm. long, the outer coloured bracts at times 6 cm. long; in one or two stems where the pedicels were unusually long an internode had developed, the inner bract, instead of being placed at the base of the pedicel, being removed 12 mm. up the pedicel. Salcombe (Dr. H. B. Guppy).

Cladium Mariscus R. Br. A solitary specimen in the Thurlestone Marshes, noted ten years ago, but since cleared away (Dr. H. B. Guppy).

- Equisetum variegatum* Schleich. Salcombe (Herb. W. S. Hore).
Targionia Michelii Corda. Wembury (Mr. E. M. Holmes).
Rivularia Pisum Ag. Slapton (Mr. E. M. Holmes).
Grateloupia dichotoma J. Ag. Wembury? (Mr. Tellam).
Platymonas tetrathele G. S. West, with *Ulva Lactuca* L. Plymouth (Mr. G. S. West).
Chlamydomonas brachyura G. S. West. Plymouth (Mr. G. S. West).
 For the last two new seaweeds, see *Journ. Bot.*, 1916, pp. 3 and 5.

8. TAVISTOCK BOTANICAL DISTRICT.

- Radicula sylvestris* Druce. Tavistock (Mr. A. Sharland).
Cochlearia anglica $\times$ *officinalis* = $\times$ *C. Briggsii* Druce. Maristow (Mr. Druce).
Dentaria bulbifera L. Bere Ferrers (Mr. C. W. Bracken).
Hypericum Desetangsii Lamotte, var. *imperforatum* E. Bonnet. Lamerton (Mr. A. Sharland). The type of the species has been recorded for Yorkshire and Sussex (see *Journ. Bot.*, 1913, p. 317, 528); but the variety cited above has not hitherto been recorded for Britain. The Lamerton plant seems to agree with this variety.
Epilobium angustifolium L., var. *E. brachycarpum* Leight. Tavistock (Mr. A. Sharland).
Sedum album L. Tavistock (Mr. A. Sharland).
Anthemis nobilis L. Tavistock (Mr. A. Sharland).
Linaria minor Desf. Tavistock (Mr. A. Sharland).
Lysimachia Nummularia L. Tavistock (Mr. A. Sharland).
Polygonum Bistorta L. Buckland Monachorum (Mr. C. W. Bracken).
P. amphibium L. Tavistock (Mr. A. Sharland).
Milium effusum L. Tavistock (Mr. A. Sharland).
Agrostis setacea Curtis. Tavistock (Mr. A. Sharland).
Trisetum flavescens Beauv. Tavistock (Mr. A. Sharland).
Aira caryophyllea L.; a variety of comparatively large stature and with exceptionally short awns and numerous short hairs at the base of the florets. Tavistock (Mr. A. Sharland).
Polystichum aculeatum Roth. Tavistock (Mr. A. Sharland).
Ceterach officinarum DC. Tavistock (Mr. A. Sharland).

FIRST REPORT OF THE COMMITTEE ON BIBLIOGRAPHY.

FIRST REPORT of the Committee—consisting of Mr. Maxwell Adams, Mr. R. Pearse Chope, Miss B. F. Cresswell, Mr. C. H. Laycock, Mr. R. Burnet Morris, Lady Radford, and Mr. H. Tapley-Soper—for the Compilation of a Bibliography of the County of Devon.

By R. BURNET MORRIS, Secretary of the Committee.

(Read at Plymouth, 19th July, 1916.)

ON February 18th, 1915, the Council, at its Winter Meeting, appointed a Committee to compile a new Bibliography of the County of Devon, such Bibliography to include :—

- (a) Works of persons born or resident in Devon ;
- (b) Works printed in Devon ;
- (c) Works written wholly or partly in Devon ;
- (d) Works relating wholly or partly to Devon or Devonians.

Owing to the War it has not been possible to obtain the services of many workers, nor has it been possible for the few workers to devote the whole of their time to Bibliography. It may, however, be claimed that, having regard to all the circumstances, substantial progress has been made.

The work which has been undertaken has consisted of three kinds :

- (1) General preliminary work ;
- (2) One special subject, Periodical Literature, and
- (3) Modern County Literature.

(1) The general preliminary work has been the collection of the existing bibliographical information from the following : Davidson's *Bibliotheca Devoniensis* and a private MS. continuation, R. N. Worth's *Three Towns*

Bibliotheca and a MS. continuation by the late W. H. K. Wright, Mr. Maxwell Adams's Indexes to the Printed Literature of Exeter and North Devon, *Trans. Devon Assoc.* (including the work of Brushfield, Ingle Dredge, Pengelly, Brooking Rowe, and others), *Trans. Plymouth Inst.*, *Western Antiquary*, Plymouth Free Library Index-Catalogue, 1892 (Devon books), Catalogue of the Exeter City Library (some of the Devon books), Prince's *Worthies of Devon*, and (London) Devonian Year Books ; also from a large number of bibliographical and biographical works relating to England generally, which it would be tedious to particularize.

(2) Special subject, Periodical Literature. (a) The most important work under this heading has been in connection with the Transactions of the Learned Societies of the County. The *Trans. Devon Assoc.* have been examined from 1862 to 1915 and a fourfold entry has been made of the titles of all papers : (i) In the " Author Catalogue " under " Devonshire Association " the contents of the various volumes have been set out in order of date ; (ii) In the " Author Catalogue " also, the titles of all papers have been arranged under their authors' names ; (iii) The Titles have been indexed for the " Place Index " ; and (iv) for the " Subject Index." Indexing the contents of the papers (except those dealing with bibliography) does not fall within the scope of this Committee, the titles only are dealt with. The *Trans. Exeter Diocesan Architectural (and Archæological) Society*, *Trans. Plymouth Inst.*, and *Journal of the Torquay Natural Hist. Soc.* have been treated in the same way (abstracts of papers being in most cases disregarded), also *Journal of the Marine Biological Association*, local subjects only being included. (b) Another branch of Periodical Literature dealt with has been " Newspapers." An attempt has been made to include the titles of all newspapers now, or in the past, published in the County. (c) Lastly, magazines have been noted, and the topographical, bibliographical and some other information has been entered from such publications as *Devon (and Cornwall) Notes and Queries*, *Devonia*, *Exeter Diocesan Gazette*, *Notes and Gleanings*, and many more. The largest class of this branch is, however, Parish magazines. Taking the number of parishes (old and new) in the County to be 556, information on this subject has been received in respect of all of them. It need hardly be said

that this portion of the work could not have been carried out without the kind co-operation of the Clergy, to whom grateful acknowledgment is tendered.

(3) Modern County Literature. A good deal of information has been collected and valuable suggestions have been received from friends interested.

The Bibliography is arranged according to the Slip Index system, the three parts "Author Catalogue," "Place Index" and "Subject Index" being separately arranged in lexicographical order. The whole is kept in drawer-boxes ready for immediate reference. The total number of slips, according to the latest estimate (22nd June, 1916), is approximately 46,000.

P.S.—In connection with the foregoing report I should like to mention three wants :—

(1) More accommodation for a County Literary Collection at the Exeter Museum—a special room, well-lighted, with plenty of space for accessions.

(2) The appointment by the Devonshire Association of an additional Committee to deal with County literary collections, to raise (by voluntary contributions) a fund for the purchase of anything suitable for inclusion in the collection. Such a Committee should, it is thought, have a Secretary resident in or near Exeter who could watch the sales of books and MSS. It will always be a matter of regret to Devonians that the MS. of Prince's *Worthies*, Vol. II, and the Milles MSS. were not secured for the County.

(3) Help from every member of the Devonshire Association by sending to me, on a post-card, particulars of any obscure book (within the above-mentioned limits) of which he may happen to know.

R. B. M.

THIRTY-FOURTH REPORT (THIRD SERIES) OF THE COMMITTEE ON THE CLIMATE OF DEVON.

*THIRTY-FOURTH REPORT of the Committee—consisting of
Mr. J. S. Amery, Sir Alfred W. Croft, Mr. Thomas
Wainwright, and Mr. R. Hansford Worth (Secretary)
appointed to collect and tabulate trustworthy and com-
parable Observations on the climate of Devon.*

Edited by R. HANSFORD WORTH, Secretary of the Committee.

(Read at Plymouth, 19th July, 1916.)

THE Committee records with deep regret the death of Mr. Thomas Wainwright. Mr. Wainwright was elected a member of the Committee in July, 1911, but for many years previously he had been a contributor to the Report, and he also collected and printed an annual record of the meteorological observations at North Devon Stations. Early this year, at the advanced age of ninety, he sent in his usual return in his own handwriting.

We have lost two stations, *Brandis Corner*, where Sir Gerald Corbet, Bart., no longer resides; and *Postbridge*, Mr. Ellery A. Bennett having ceased to occupy Archerton House. Both these were records which we can ill spare.

Two new stations appear in the tables, Coplestone House, observer Miss M. Pope; and South Molton, observer Mr. Fred. Day, F.R.G.S.

The best thanks of the Association are due to the observers, whose kind assistance is the essential feature of your Committee's work.

The year 1915 in Devon was, on the whole, wet, the rainfall exceeding the average by 16%, an excess which is reached or exceeded by about one year out of four.

The temperature was slightly below the average, the mean for this year showing 0.8° deficiency.

Sunshine was 7% below the average, taking the year as a whole.

Nineteen hundred and fifteen was thus rather wet, somewhat cold and somewhat dull.

The distribution of rainfall in the year was erratic. February and December were very wet ; May, July and October were wet ; January was rather dry ; November, August and June were dry ; March, September and April were distinctly dry.

As to temperature, July was 3.4° below its average, and November 5.1° ; May 0.7° above its average, and December 1.3° . No other months rose above their average temperature.

In the matter of sunshine, October and December were very dull ; August distinctly dull. November was unusually bright, and September was bright.

The year was drier, colder and duller than 1914. At the majority of wetter stations the greatest rainfall fell on the 16th February—Head Weir, Plymouth Watershed returning 2.74 inches for that day, Leusdon 2.90, South Brent 2.91, Ashburton and Huccaby 2.95, Holne 3.44, Princetown 3.80 ; but more rain fell at Princetown on the 14th of December, viz. 3.95 inches, a record for this station in 40 years. Some few other districts followed Princetown in the date of the wettest day.

The drier stations show no general agreement, the wettest days being due to summer and autumn rains.

At Princetown there were recorded :—

19 days with rainfall over 1 inch and under 2 inches.

2	„	„	2 inches	„	3	„
2	„	„	3 inches	„	4	„

The longest spell of dry weather at Princetown was 13 days, from 7 to 19 June, inclusive. In contrast with this, at Rousdon, except for a slight shower on June 2, there was no rain for 30 days, May 20 to June 20.

At Rousdon the rainfall in February was the highest record for that month in 31 years, and the rainfall of December was the highest for any month of the same period.

The following table gives a comparison of the weather of 1915 with the average. The rainfall is based on the Druid record, and compared with the 40 years ending 31 December, 1905. Temperature is also based on the Druid record, the period for average being 21 years to end of 1915. Sunshine comparisons are founded on the Rousdon record, the period for average being the past 32 years.

The weather of 1915 compared with average conditions.

	Rain %.	Temperature Degrees.	Sunshine %.
January	87 ...	± 0.0 ...	99
February	252 ...	± 0.0 ...	98
March	27 ...	- 0.4 ...	96
April	49 ...	- 0.2 ...	95
May	158 ...	+ 0.7 ...	98
June	69 ...	- 0.1 ...	91
July	129 ...	- 3.4 ...	90
August	63 ...	- 0.3 ...	78
September	36 ...	- 0.1 ...	118
October	126 ...	- 0.9 ...	61
November	73 ...	- 5.1 ...	145
December	242 ...	+ 1.3 ...	75
Whole year	116 ...	- 0.8 ...	93

The stations are as follows :—

STATION.	ELEVATION (feet) O.D.	OBSERVER OR AUTHORITY.
Abbotskerswell (Court Grange)	150 ...	Mrs. Marcus Hare.
Ashburton (Druid)	. . . 584 ...	J. S. Amery.
Ashburton (West St.)	. . . 240 ...	W. J. O. Evans.
Barnstaple	. . . 25 ...	Thomas Wainwright.
Bere Alston (Rumleigh).	. . . 124 ...	Sir Alfred W. Croft, M.A., K.C.I.E.
Copelstone House	. . . 315 ...	Miss M. Pope.
Cullompton	. . . 202 ...	Murray T. Foster, F.R.MET.SOC.
Dartmoor, Leusdon Vicarage		Rev. A. A. Woolcombe.
Devonport Watershed :—		
Cowsic Valley (weekly)	1352	} Frank Howarth, M.INST.C.E.
Devil's Tor (near Bear-down Man) (monthly)	1785	
Exeter (Devon and Exeter Institution)	. . . 155 ...	John E. Coombes, Librarian.
Holne	. . . 650 ...	The Rev. John Gill, M.A.
Huccaby	. . . 900 ...	Mr. Wilson, for Capt. H. H. Joll.
Ilfracombe	. . . 20 ...	O. Prouse, A.M.I.C.E.
Lynmouth (Rock House)	. . . 22 ...	T. H. Mead-Briggs.
Newton Abbot (The Chestnuts)	. . . 100 ...	E. D. Wylie.
Okehampton (Oaklands)	. . . 505 ...	Maj.-Gen. E. H. Holley, R.A., J.P.
Plymouth Observatory	. . . 116 ...	H. Victor Prigg, A.M.I.C.E., F.R.MET.SOC.
Plymouth Watershed :—		
Head Weir (Plymouth Reservoir)	. . . 720	} Frank Howarth, M.INST.C.E.
Siward's Cross (monthly)	1200	
Princetown (H.M. Prison)	1359 ...	George Parry.
Roborough Reservoir	. . . 720	Frank Howarth, M.I.C.E.
Rousdon (The Observatory)	516 ...	C. Grover, observer for Lady Peek.

160 THIRTY-FOURTH REPORT (THIRD SERIES) OF THE

STATION.	ELEVATION (feet) O.D.	OBSERVER OR AUTHORITY.
Salcombe	. 39 ...	J. Partridge.
Sidmouth (Sidmount) .	. 186 ...	Miss Constance M. Radford.
Simonsbath	. 1080 ...	Rev. H. F. Ramsay.
South Brent (Great Aish)	. 500 ...	Miss C. M. Kingwell.
South Molton	. 450 ...	Fred. Day, F.R.G.S.
Tavistock (L. and S.W. Rly. Station)	. 375 ...	W. J. Monk.
Teignmouth Observatory .	. 20 ...	G. Rossiter.
Teignmouth (Benton) . .	. 320 ...	W. C. Lake, M.D.
Torquay Observatory . .	. 12 ...	Frederick March, F.R.Met.Soc.
Torquay Watershed :—		
Kennick	. 836	} S. C. Chapman, M.I.C.E.
Laployd	. 1041	
Mardon	. 836	
Torrington, Great (Enfield) .	. 336 ...	George M. Doe.
Totnes (Berry Pomeroy) .	. 185 ...	Charles Barran, J.P.
Woolacombe (N. Devon) .	. 60 ...	R. W. Hansford, for Miss Chichester.

JANUARY, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.	
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.						
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.					
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.		
Abbotskerswell .	4.17	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburt'n(Druid)	4.97	1.07	6	27	40.0	37.0	45.4	41.2	30.0	52.0	87	6.7	...	...	...
Ashburton															
(West Street)	4.83	1.18	6	...	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	4.40	.62	6	21	40.8	36.7	46.1	41.4	23.0	51.0	89	7.0	...	...	...
Bere Alston .	4.47	1.13	6	25	40.1	35.9	45.6	40.7	24.0	54.0	...	...	...	...	...
Coplestone Ho. .	4.61	.89	6	25	...	...	...	...	...	...	...	...	...	...	...
Cowsic Valley .	8.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton .	4.72	.88	6	24	44.9	36.6	45.5	41.1	24.0	53.0	60	7.6	51.2	13	
Devil's Tor	4.20	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	3.03	.75	6	19	41.7	37.2	45.6	41.4	26.0	55.0	...	...	...	...	...
Holne .	6.18	1.19	6	21	...	...	...	...	...	...	...	...	...	...	...
Huccaby .	5.24	1.02	6	25	...	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	3.5	.44	20	21	42.5	39.8	46.8	43.3	29.0	51.0	...	...	43.7	11	
Leusdon .	6.21	1.12	6	23	...	...	...	...	...	...	...	...	...	...	...
Lynmouth .	4.77	.62	20	26	...	39.1	44.2	41.7	30.0	52.0	...	...	...	...	...
Newton Abbot .	2.95	.74	6	24	...	...	...	...	...	...	...	...	...	...	...
Okehampton .	6.18	1.09	6	23	...	...	...	...	...	...	...	...	...	...	...
Plymouth Obs.	3.92	.98	6	25	43.1	38.4	46.7	42.6	27.0	53.0	90	8.5	65.2	10	
Plymouth Wtshd.															
Head Weir	6.05	1.18	6	26	...	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	6.14	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown .	8.46	1.63	6	25	36.6	33.2	40.8	37.0	24.0	49.0	94	9.1	...	...	...
Roborough															
(S. Devon)	4.98	1.15	6	23	...	...	...	...	...	...	...	...	...	...	...
Rousdon .	3.58	.95	6	20	...	35.8	44.2	40.0	27.0	53.0	...	...	68.2	10	
Salcombe .	3.99	1.19	6	21	...	38.7	46.4	42.5	28.0	54.0	...	...	75.3	12	
Sidmouth .	3.30	.68	6	23	...	37.7	45.8	41.8	27.0	55.0	...	...	...	...	...
Simonsbath .	8.93	1.24	20	24	...	...	...	...	23.0	47.0	...	...	...	...	...
South Brent .	7.54	1.45	6	25	...	...	...	...	...	...	...	...	...	...	...
South Molton .	6.07	.94	20	21	...	...	...	...	...	...	...	...	...	...	...
Tavistock .	5.08	1.60	6	28	40.4	36.1	44.6	42.1	22.0	53.0	88	8.5	...	...	...
Teignmouth Obs.	2.77	.71	6	20	42.4	39.1	47.2	43.2	29.5	58.0	83	6.8	68.2	6	
Teignmouth															
(Benton)	2.57	.68	6	25	41.1	37.6	45.8	41.7	29.1	57.2	91	7.3	...	...	...
Torquay Obs.	3.16	.92	6	22	42.3	39.1	47.4	43.3	30.0	59.5	87	7.0	72.9	5	
Torquay Wtshd.															
Kennick .	3.35	.68	6	27	...	...	...	...	...	...	...	...	...	...	...
Laployd .	4.03	.78	6	27	...	...	...	...	...	...	...	...	...	...	...
Mardon .	3.86	.80	6	26	...	...	...	...	...	...	...	...	...	...	...
Torrington .	4.47	.64	20	26	...	30.9	39.2	35.1	19.0	46.0	...	...	...	...	...
Totnes															
(Berry Pomeroy)	4.52	1.04	6	20	...	...	...	...	...	...	...	...	...	...	...
Woolacombe .	3.39	.43	1	21	43.0	39.0	46.0	42.5	29.0	50.0	84	6.7	49.8	12	

FEBRUARY, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	Temperat. 9 a.m.	MEANS.			EXTREMES.							
		Depth.	Date.			Minima.	Maxima.	Mean.	Minimum.	Maximum.						
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Abbotskerswell .	8.55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Ashburt'n(Druid)	11.89	2.95	16	24	40.6	36.0	46.7	41.4	28.0	51.0	90	6.4	...	...	...	
Ashburton																
(West Street)	10.44	2.81	16	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	5.98	.68	16	22	39.3	32.5	47.0	39.7	22.0	53.0	87	7.0	...	...	...	
Bere Alston .	8.92	1.87	16	23	39.6	34.3	46.5	40.4	21.0	52.0	...	...	...	...	...	
Coplestone Ho. .	5.20	.69	13	24	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley .	13.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton .	5.91	.65	13	25	39.4	37.7	42.9	40.3	19.0	52.0	87	7.7	72.6	6	...	
Devil's Tor	8.20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	5.14	.82	16	23	41.4	35.8	46.9	41.3	23.0	53.0	...	...	...	...	...	
Holne .	15.42	3.44	16	25	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	12.97	2.95	16	22	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	6.69	1.07	16	25	42.2	38.0	47.0	42.5	29.0	52.0	...	...	74.3	6	...	
Leusdon .	12.97	2.90	16	22	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth .	7.87	1.10	16	24	...	37.1	43.2	40.2	26.0	52.0	...	...	...	...	...	
Newton Abbot .	6.73	1.31	16	22	...	...	...	...	...	...	...	...	...	...	...	
Okehampton .	8.78	1.08	16	22	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs. .	6.89	1.34	16	24	42.8	37.5	47.8	42.7	25.0	51.0	89	8.2	85.2	6	...	
Plymouth Wtshd.																
Head Weir .	12.14	2.35	16	25	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross. .	13.65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown. .	16.77	3.80	16	22	36.8	32.3	39.4	35.8	24.0	45.0	94	8.9	...	...	...	
Roborough:																
(S. Devon)	10.17	2.20	16	24	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	5.44	.85	16	24	...	35.1	45.3	40.2	25.0	48.0	...	...	86.2	7	...	
Salcombe .	6.09	1.28	16	22	...	37.0	48.0	42.5	26.0	52.1	...	...	87.6	7	...	
Sidmouth .	6.40	.92	16	24	...	36.0	47.2	41.6	23.0	51.0	...	...	...	...	...	
Simonsbath .	10.40	1.77	16	26	...	...	...	...	17.0	47.0	...	...	...	...	...	
South Brent	12.50	2.14	16	23	...	...	...	...	...	...	...	...	...	...	...	
South Molton .	7.20	1.01	16	22	...	...	...	...	...	...	...	...	...	...	...	
Tavistock	10.58	1.97	16	23	39.9	33.8	46.0	39.9	20.0	52.0	85	8.4	...	...	...	
Teignmouth Obs.	6.50	1.37	16	22	41.8	37.8	48.3	43.1	25.1	52.9	84	6.5	88.2	7	...	
Teignmouth																
(Benton)	5.33	1.17	16	23	41.6	35.8	47.4	41.6	26.8	52.6	94	6.9	...	...	...	
Torquay Obs. .	7.50	1.70	16	22	42.5	37.7	48.3	43.0	27.1	53.1	87	6.5	86.1	5	...	
Torquay Wtrshd.																
Kennick .	8.10	1.80	16	25	...	...	...	...	...	...	...	...	...	...	...	
Laployd .	10.07	2.16	16	25	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	9.40	2.10	16	25	...	...	...	...	...	...	...	...	...	...	...	
Torrington .	5.95	.80	13	22	...	29.7	40.8	35.3	17.0	46.0	...	...	...	...	...	
Totnes																
(Berry Pomeroy)	8.27	1.55	16	20	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe .	4.89	.71	7	22	41.9	38.0	47.0	42.5	31.0	54.0	85	6.6	75.0	7	...	

MARCH, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.					
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.				
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.	
Abbotskerswell .	1.68	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburtn(Druid)	1.09	.55	22	8	43.3	37.0	49.5	43.3	28.0	59.0	78	5.4	...	...
Ashburton (West Street)	1.10	.54	22	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	0.95	.21	10	11	41.9	35.1	48.3	41.7	23.0	58.0	80	6.0	...	...
Bere Alston .	0.80	.31	22	11	41.1	36.1	48.9	42.5	23.0	57.0	...	...	...	...
Coplestone Ho. .	0.47	.21	22	11	...	...	...	...	...	...	...	...	...	...
Cowsic Valley .	2.10	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton .	0.87	.40	22	7	42.8	35.3	49.5	42.4	22.0	57.0	80	6.8	108.4	4
Devil's Tor .	2.10	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	0.30	.14	22	6	44.4	36.9	50.0	43.4	26.0	60.5	...	...	...	...
Holne .	1.36	.66	22	8	...	...	...	...	...	...	...	...	...	...
Huccaby .	0.87	.37	22	6	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	1.05	.26	3	11	42.3	39.2	47.5	43.5	31.0	59.0	...	...	127.7	7
Leusdon .	0.98	.45	22	8	...	...	...	...	...	...	...	...	...	...
Lynmouth .	0.69	.18	2	11	...	39.0	49.0	44.0	31.0	61.0	...	...	...	...
Newton Abbot .	1.00	.44	22	10	...	...	...	...	...	...	...	...	...	...
Okehampton .	0.87	.22	3	9	...	...	...	...	...	...	...	...	...	...
Plymouth Obs. .	1.19	.38	22	9	43.9	37.9	49.3	43.6	28.0	59.0	80	6.9	133.1	2
Plymouth Wtshd. Head Weir	1.76	.50	3	9	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	1.88	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown .	2.50	.80	3	9	38.1	33.2	44.2	38.7	23.0	54.0	90	6.4	...	...
Roborough (S. Devon)	1.57	.42	22	11	...	...	...	...	...	...	...	...	...	...
Rousdon .	0.98	.50	22	7	...	35.2	48.0	41.6	26.0	56.0	...	...	129.2	5
Salcombe .	1.00	.34	22	9	...	38.0	49.0	43.5	28.0	57.0	...	...	144.5	5
Sidmouth .	0.90	.36	22	6	...	36.8	49.3	43.1	27.0	57.0	...	...	...	...
Simonsbath .	2.12	.64	2	14	...	...	...	...	21.0	52.0	...	...	...	...
South Brent .	2.62	.70	22	8	...	...	...	...	...	...	...	...	...	...
South Molton .	1.30	.41	22	8	...	...	...	...	...	...	...	...	...	...
Tavistock .	1.13	.35	22	12	42.7	35.8	48.5	42.2	22.0	57.0	84	6.4	...	...
Teignmouth Obs.	0.65	.30	22	7	43.2	38.8	50.0	44.4	29.0	59.9	80	5.6	125.6	3
Teignmouth (Benton)	0.76	.32	22	11	42.8	36.1	49.5	42.8	26.0	59.5	81	7.0	...	...
Torquay Obs. .	0.96	.31	22	8	44.0	38.9	49.9	44.4	30.1	61.2	83	6.0	131.9	5
Torquay Wtrshd. Kennick .	0.66	.30	22	10	...	...	...	...	...	...	...	...	...	...
Laployd .	0.73	.30	22	10	...	...	...	...	...	...	...	...	...	...
Mardon .	0.75	.34	22	10	...	...	...	...	...	...	...	...	...	...
Torrington .	0.76	.21	22	10	...	30.8	42.7	36.8	20.0	56.0	...	...	...	...
Totnes (Berry Pomeroy)	1.39	.48	11	6	...	...	...	...	...	...	...	...	...	...
Woolacombe .	1.16	.24	2	12	43.2	39.0	48.0	43.5	32.0	59.0	84	5.9	124.3	8

APRIL, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.							Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.	
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Abbotskerswell .	1.12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburt'n(Druid)	1.58	.66	6	11	48.2	40.7	55.2	47.9	35.0	68.0	73	6.6	...	...	...	...
Ashburton (West Street)	1.28	.61	6	...	...	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	1.57	.30	6	13	47.3	39.9	53.2	46.0	29.0	69.0	79	7.0	...	...	...	...
Bere Alston .	1.28	.52	6	13	48.1	40.5	55.0	47.7	29.0	67.0	...	...	...	...	...	...
Coplestone Ho. .	0.97	.22	9	12	...	...	...	...	...	...	...	...	...	...	...	...
Cowsic Valley .	3.25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton .	1.25	.36	6	13	48.1	39.4	56.5	48.0	28.0	70.0	77	7.4	127.1	3	...	...
Devil's Tor .	2.60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	0.69	.11	20	10	51.0	41.8	57.0	49.4	33.0	69.0	...	...	...	...	...	...
Holne .	2.13	.95	6	13	...	...	...	...	...	...	...	...	...	...	...	...
Huccaby .	1.78	.61	6	11	...	...	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	1.59	.55	6	15	46.9	43.3	52.6	47.9	38.0	64.0	...	...	157.9	7	...	...
Leusdon .	2.04	.61	6	14	...	...	...	...	...	...	...	...	...	...	...	...
Lynmouth .	1.55	.45	6	16	...	43.0	51.1	47.1	36.0	64.0	...	...	...	...	...	...
Newton Abbot .	1.39	.40	6	16	...	...	...	...	...	...	...	...	...	...	...	...
Okehampton .	1.97	.33	6	11	...	...	...	...	...	...	...	...	...	...	...	...
Plymouth Obs. .	1.37	.47	6	13	49.9	42.1	54.7	48.4	30.0	68.0	76	7.7	148.7	1	...	...
Plymouth Wtshd. Head Weir .	2.14	.83	6	16	...	...	...	...	...	...	...	...	...	...	...	...
Siward's Cross .	2.15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown .	2.86	1.00	6	12	43.0	37.4	50.0	43.7	30.0	64.0	83	6.9	...	...	...	...
Roborough (S. Devon)	1.89	.80	6	14	...	...	...	...	...	...	...	...	...	...	...	...
Rousdon .	0.87	.33	6	11	...	38.6	53.4	46.0	32.0	68.0	...	...	161.7	5	...	...
Salcombe .	1.33	.46	6	13	...	42.0	54.0	48.0	31.0	61.0	...	...	152.3	3	...	...
Sidmouth .	1.00	.24	6	14	...	40.7	54.8	47.8	34.0	71.0	...	...	...	...	...	...
Simonsbath .	3.08	.72	6	13	...	...	...	...	30.0	62.0	...	...	...	...	...	...
South Brent .	2.82	1.14	6	12	...	...	...	...	...	...	...	...	...	...	...	...
South Molton .	2.20	.64	3	11	...	...	...	...	...	...	...	...	...	...	...	...
Tavistock .	1.63	.42	6	14	48.3	39.9	57.3	48.6	28.0	69.0	78	8.2	...	...	...	...
Teignmouth Obs.	0.86	.28	6	12	45.5	42.8	55.4	49.1	33.8	63.1	77	6.7	146.6	5	...	...
Teignmouth (Benton)	0.81	.26	6	12	48.3	40.6	55.3	47.9	32.3	67.1	93	7.7	...	...	...	...
Torquay Obs. .	1.01	.41	6	14	49.1	42.7	55.2	49.0	35.0	66.2	79	7.0	149.1	3	...	...
Torquay Wtshd. Kennick .	0.96	.18	6	13	...	...	...	...	...	...	...	...	...	...	...	...
Laployd .	1.16	.22	9	13	...	...	...	...	...	...	...	...	...	...	...	...
Mardon .	1.19	.28	6	15	...	...	...	...	...	...	...	...	...	...	...	...
Torrington .	1.46	.31	6	14	...	35.3	49.2	42.3	27.0	64.0	...	...	...	...	...	...
Totnes (Berry Pomeroy)	1.27	.68	6	12	...	...	...	...	...	...	...	...	...	...	...	...
Woolacombe .	1.26	.38	6	15	47.3	43.0	52.0	47.5	38.0	68.0	87	5.8	153.7	8	...	...

MAY, 1915.

STATION.	RAINFALL.			Wet Days.	TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (9-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.			MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Abbotskerswell .	3.40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Ashburton (Druid)	4.22	1.12	13	11	55.7	46.4	61.4	53.9	37.0	74.0	73	5.0	...	...	...	
Ashburton (West Street)	3.88	1.21	13	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	1.91	.57	13	11	55.7	45.7	60.5	54.1	32.0	77.0	69	5.0	...	...	...	
Bere Alston .	3.07	.67	13	12	56.4	47.1	64.9	56.0	35.0	79.0	...	...	...	...	...	
Coplestone Ho. .	1.75	.46	11	10	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley .	3.35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton .	2.01	.52	12	12	56.4	45.3	64.5	54.9	32.0	79.0	71	6.2	195.1	2	...	
Devil's Tor .	4.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	1.91	.56	12	9	57.3	46.8	63.9	55.3	38.0	78.0	...	...	...	...	...	
Holne .	4.61	1.46	13	12	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	4.98	1.09	13	12	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	1.92	.38	13	12	52.8	47.9	59.3	53.6	41.0	72.0	...	...	234.7	2	...	
Leusdon .	3.96	1.08	13	11	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth .	1.92	.69	13	11	...	49.0	61.3	55.2	38.0	72.0	...	...	...	...	...	
Newton Abbot .	2.87	.91	13	11	...	...	...	...	...	...	...	...	...	...	...	
Okehampton .	2.72	1.06	13	10	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs. .	2.82	.77	13	11	57.2	48.7	61.3	55.0	40.0	75.0	72	6.4	210.5	4	...	
Plymouth Wtshd. Head Weir .	3.38	1.18	13	12	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross.	3.86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown .	4.26	1.50	13	11	50.2	42.7	58.0	50.4	33.0	71.0	78	5.9	...	...	...	
Roborough (S. Devon)	3.40	.88	13	12	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	2.24	.61	12	11	...	44.2	60.4	52.3	34.0	74.0	...	...	212.5	3	...	
Salcombe .	3.40	1.11	13	10	...	47.0	61.0	54.0	39.0	73.0	...	...	217.9	6	...	
Sidmouth .	2.00	.56	12	9	...	46.0	61.7	53.9	36.0	77.0	...	...	...	...	...	
Simonsbath .	2.86	.98	13	10	...	...	...	...	29.0	69.0	...	...	...	...	...	
South Brent .	4.67	1.60	13	11	...	...	...	...	...	...	...	...	...	...	...	
South Molton .	2.14	.43	13	9	...	...	...	...	...	...	...	...	...	...	...	
Tavistock .	3.30	.80	13	11	56.9	46.4	62.6	54.5	35.0	75.0	71	6.6	...	...	...	
Teignmouth Obs.	2.82	.65	13	12	55.3	48.6	60.5	54.5	39.8	74.5	76	5.2	199.0	5	...	
Teignmouth (Benton)	2.94	.64	13	13	55.3	47.3	61.7	54.5	36.2	73.7	87	6.1	...	...	...	
Torquay Obs. .	3.61	1.36	13	10	55.7	48.5	61.4	55.0	39.1	73.4	74	5.0	213.9	4	...	
Torquay Wtshd. Kennick .	3.22	.75	12	12	...	...	...	...	...	...	...	...	...	...	...	
Laployd .	3.31	.68	12	11	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	3.47	.79	12	12	...	...	...	...	...	...	...	...	...	...	...	
Torrington .	2.41	.59	13	12	...	40.6	60.1	50.4	29.0	71.0	...	...	...	...	...	
Totnes (Berry Pomeroy)	3.56	1.60	13	10	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe .	2.58	.75	13	13	54.5	48.0	60.0	54.0	40.0	75.0	76	4.0	224.5	2	...	

JUNE, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.		
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
Abbotskerswell .	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Ashburt'n(Druid)	1.98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburton	1.82	.45	25	12	57.8	50.1	64.4	57.3	43.0	74.0	76	6.6	...	...	...	...
(West Street)	2.08	.56	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	1.08	.40	27	11	58.8	48.8	66.1	57.5	35.0	76.0	75	6.0	...	...	...	...
Bere Alston	2.18	.68	26	13	59.7	50.2	68.3	59.2	39.0	77.0	...	...	...	...	...	...
Coplestone Ho. .	1.54	.37	27	10	...	...	...	...	...	...	...	...	...	...	...	...
Cowsic Valley .	3.60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton	2.00	.81	25	10	60.3	48.4	69.5	59.0	34.0	77.0	70	7.2	186.1	3	...	...
Devil's Tor	3.10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	2.20	.78	25	9	61.6	51.3	68.5	59.9	42.0	76.5	...	...	...	...	...	...
Holne .	1.99	.43	29	12	...	...	...	...	...	...	...	...	...	...	...	...
Huccaby .	1.92	.53	29	11	...	...	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	0.95	.22	29	12	56.7	52.0	62.5	57.2	43.0	72.0	...	...	201.1	2	...	...
Leusdon .	1.98	.52	29	12	...	...	...	...	...	...	...	...	...	...	...	...
Lynmouth .	1.51	.38	26	12	...	53.3	64.2	58.7	42.0	72.0	...	...	...	...	...	...
Newton Abbot .	2.07	.60	$\frac{2}{3}$	11	...	...	...	...	...	...	...	...	...	...	...	...
Okehampton .	1.86	.56	29	8	...	...	...	...	...	...	...	...	...	...	...	...
Plymouth Obs. .	2.19	.45	26	12	63.1	51.8	63.9	57.9	42.0	73.0	76	6.8	188.1	0	...	...
Plymouth Wtshd.																
Head Weir	2.37	.65	26	11	...	...	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	2.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown .	3.62	1.00	29	14	54.5	47.2	60.9	54.0	38.0	69.0	76	6.6	...	...	...	...
Roborough																
(S. Devon)	1.87	.44	26	11	...	...	...	...	...	...	...	...	...	...	...	...
Rousdon .	1.49	.45	27	9	...	48.8	62.2	55.5	42.0	72.0	...	...	190.6	0	...	...
Salcombe .	2.05	.33	30	13	...	51.0	63.0	57.0	43.0	70.0	...	...	206.0	3	...	...
Sidmouth .	2.00	.56	29	11	...	50.0	64.0	57.0	42.0	74.0	...	...	...	...	...	...
Simonsbath .	1.53	.40	26	13	...	...	...	...	33.0	69.0	...	...	...	...	...	...
South Brent .	2.93	.80	29	11	...	...	...	...	...	...	...	...	...	...	...	...
South Molton .	1.96	.42	27	9	...	...	...	...	...	...	...	...	...	...	...	...
Tavistock	2.43	.70	26	14	59.7	43.0	65.3	54.2	39.0	74.0	73	7.2	...	...	...	...
Teignmouth Obs.	2.07	.94	25	11	58.2	52.0	64.4	58.2	43.7	75.2	77	6.9	192.4	2	...	...
Teignmouth																
(Benton)	2.09	1.02	25	11	55.7	50.3	63.8	57.0	42.2	71.7	94	7.9	...	...	...	...
Torquay Obs. .	2.07	.71	25	12	58.3	52.3	63.8	58.1	45.1	73.1	76	7.0	203.8	1	...	...
Torquay Wtshd.																
Kennick .	1.72	.57	25	11	...	...	...	...	...	...	...	...	...	...	...	...
Laployd .	1.73	.55	25	11	...	...	...	...	...	...	...	...	...	...	...	...
Mardon .	1.64	.60	25	11	...	...	...	...	...	...	...	...	...	...	...	...
Torrington .	1.42	.39	27	12	...	43.9	67.2	55.6	32.0	76.0	...	...	...	...	...	...
Totnes																
(Berry Pomeroy)	1.90	.45	25	10	...	...	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	0.92	.86	27	13	58.1	51.0	64.0	57.5	44.0	74.0	80	6.0	187.7	4	...	...

JULY, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
Abbotskerswell .	ins.	ins.	...	...	deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.	...	...	
Ashburt'n (Druid)	3.99	1.10	16	16	60.0	50.0	65.2	57.7	48.0	72.0	76	5.7	...	...	...	
Ashburton (West Street)	4.13	1.12	16	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	3.85	.83	16	20	59.7	52.1	63.6	57.8	53.0	65.0	89	7.0	...	...	...	
Bere Alston .	5.01	1.16	16	19	60.5	51.0	66.4	58.7	45.0	74.0	...	...	...	...	...	
Coplestone Ho. .	3.54	.81	16	17	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley .	9.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton .	4.61	.77	16	20	61.2	49.8	67.3	58.6	44.0	79.0	77	7.8	174.6	5	...	
Devil's Tor .	6.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	2.97	.70	4	16	63.4	51.9	68.9	60.4	47.0	80.0	...	...	...	...	...	
Holne .	5.17	1.15	16	19	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	3.77	.81	6	16	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	4.75	1.05	16	19	58.8	55.2	62.5	58.8	51.0	69.0	...	...	209.8	3	...	
Leusdon .	4.62	.97	16	15	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth .	3.75	.65	16	17	...	55.1	62.3	58.7	52.0	68.0	...	...	...	...	...	
Newton Abbot .	3.45	.66	16	19	...	...	...	...	...	...	...	...	...	...	...	
Okehampton .	5.11	1.09	16	16	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs. .	4.21	.99	15	17	66.1	53.1	64.8	59.0	47.0	73.0	82	8.0	185.8	2	...	
Plymouth Wtshd. Head Weir .	5.97	1.73	16	21	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross. .	7.30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown .	8.25	2.10	16	22	56.4	49.3	59.5	54.4	46.0	71.0	84	8.3	...	...	...	
Roborough (S. Devon)	5.17	1.11	16	20	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	3.75	.87	16	16	...	49.8	63.1	56.5	45.0	71.0	...	...	191.6	4	...	
Salcombe .	3.71	.90	16	14	...	53.0	66.0	59.5	47.0	71.0	...	...	239.0	3	...	
Sidmouth .	3.30	.76	16	17	...	51.9	64.8	58.4	47.0	72.0	...	...	...	...	...	
Simonsbath .	7.05	2.20	16	27	...	...	...	...	40.0	68.0	...	...	...	...	...	
South Brent .	7.34	1.84	16	19	...	...	...	...	...	...	...	...	...	...	...	
South Molton .	5.70	1.61	16	21	...	...	...	...	...	...	...	...	...	...	...	
Tavistock .	5.15	1.07	16	19	58.9	50.1	66.1	56.1	43.0	76.0	80	8.8	...	...	...	
Teignmouth Obs.	4.02	.79	16	19	61.5	53.0	66.3	59.7	46.5	72.4	75	6.1	207.9	4	...	
Teignmouth (Benton)	3.81	.80	24	18	60.2	51.5	65.6	58.5	43.1	74.2	80	7.4	...	...	...	
Torquay Obs. .	3.26	.81	16	19	61.6	53.8	66.0	59.9	50.3	72.1	74	7.5	216.7	4	...	
Torquay Wtrshd. Kennick .	3.46	.63	16	21	...	...	...	...	...	...	...	...	...	...	...	
Laployd .	4.06	.75	16	21	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	3.37	.71	16	21	...	...	...	...	...	...	...	...	...	...	...	
Torrington .	3.86	.95	16	19	...	45.9	63.2	54.6	39.0	74.0	...	...	...	...	...	
Totnes (Berry Pomeroy)	4.78	1.32	16	18	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe .	4.82	1.22	16	18	59.1	55.0	64.0	59.5	51.0	73.0	84	6.6	177.9	4	...	

AUGUST, 1915.

STATION	RAINFALL.				TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Abbotskerswell .	1.76	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Ashburt'n(Druid)	2.46	1.00	1	13	62.0	54.0	67.7	60.8	46.0	74.0	77	5.5	...	...	...	
Ashburton (West Street)	2.49	.85	1	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	2.35	.52	2	13	60.4	52.0	65.7	58.8	41.0	75.0	84	7.0	...	...	...	
Bere Alston .	1.81	.66	1	15	61.0	52.9	68.4	60.6	41.0	75.0	...	...	...	...	...	
Coplestone Ho. .	2.98	1.02	1	14	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley .	2.75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton .	2.53	.80	12	12	62.5	51.0	70.1	60.6	39.0	78.0	80	7.0	169.1	1	...	
Devil's Tor .	2.90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	1.92	.57	13	11	64.2	52.8	70.9	61.8	45.0	78.0	...	...	...	...	...	
Holne .	2.65	1.18	1	14	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	3.39	1.69	1	13	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	1.15	.35	31	14	58.1	56.8	65.0	60.9	52.0	73.0	...	...	194.2	2	...	
Leusdon .	3.32	1.35	1	10	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth .	1.99	.35	31	16	...	53.4	66.0	60.7	52.0	72.0	...	...	...	...	...	
Newton Abbot .	1.89	.59	1	13	...	...	...	...	...	...	...	...	...	...	...	
Okehampton .	3.22	.88	1	12	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs. .	1.47	.48	1	13	64.4	55.2	67.4	61.3	46.0	75.0	80	6.1	216.6	1	...	
Plymouth Wtshd. Head Weir .	2.67	1.00	1	16	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross .	1.85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown .	4.15	1.57	1	16	56.6	50.9	62.5	56.7	43.0	70.0	84	6.9	...	...	...	
Roborough (S. Devon)	2.50	.64	1	16	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	1.91	.59	5	11	...	51.7	65.3	58.5	40.0	71.0	...	...	156.0	2	...	
Salcombe .	1.13	.33	1	11	...	55.0	68.0	61.5	45.0	72.0	...	...	235.3	2	...	
Sidmouth .	1.60	.36	1	11	...	53.5	66.9	60.2	42.0	72.0	...	...	...	...	...	
Simonsbath .	3.81	1.05	1	17	...	...	...	...	39.0	66.0	...	...	...	...	...	
South Brent .	2.66	.84	1	12	...	...	...	...	...	...	...	...	...	...	...	
South Molton .	3.91	.64	2	15	...	...	...	...	...	...	...	...	...	...	...	
Tavistock .	2.38	.71	1	18	62.0	52.0	66.5	59.2	40.0	75.0	80	7.5	...	...	...	
Teignmouth Obs.	1.80	.65	1	12	62.4	55.2	69.3	62.3	45.9	76.0	78	5.4	212.1	1	...	
Teignmouth (Benton)	1.81	.54	1	10	65.4	53.9	68.6	61.2	44.6	74.1	64	6.9	...	...	...	
Torquay Obs. .	1.87	.63	1	14	63.3	55.9	68.7	62.3	46.2	72.1	78	6.0	219.7	1	...	
Torquay Wtshd. Kennick .	2.17	1.29	1	13	...	...	...	...	...	...	...	...	...	...	...	
Laployd .	2.68	1.25	1	13	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	2.38	1.31	1	14	...	...	...	...	...	...	...	...	...	...	...	
Torrington .	2.08	.44	1	13	...	47.1	63.7	55.4	39.0	72.0	...	...	...	...	...	
Totnes (Berry Pomeroy)	1.55	.42	2	9	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe .	1.64	.40	31	15	61.6	57.0	66.0	61.5	51.0	73.0	83	5.7	187.0	4	...	

SEPTEMBER, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.			
Abbotskerswell .	1.60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Ashburtn(Druid)	1.49	.39	28	12	58.7	50.4	64.9	57.6	39.0	74.0	81	3.4	...	...	...	
Ashburton (West Street)	1.59	.62	26	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	1.76	.31	28	14	58.1	47.4	65.0	56.2	36.0	75.0	79	4.0	...	...	...	
Bere Alston .	1.83	.28	28	15	54.9	46.7	61.3	54.0	36.0	70.0	...	...	...	...	...	
Coplestone Ho. .	1.22	.47	28	16	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley .	2.25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton .	0.97	.36	28	13	58.8	46.0	67.3	56.7	33.0	76.0	82	5.5	172.4	3		
Devil's Tor .	2.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	1.11	.33	28	14	57.5	47.5	65.1	56.3	38.0	76.0	...	...	...	...	...	
Holne .	0.82	.20	28	10	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	1.08	.30	1	10	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	1.39	.30	27	14	59.7	53.9	64.9	59.4	46.0	75.0	...	...	191.2	4		
Leusdon .	1.16	.40	1	10	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth .	1.13	.39	28	12	...	53.0	63.4	58.2	53.0	72.0	...	...	...	...	...	
Newton Abbot .	1.05	.35	28	11	...	...	...	...	...	...	...	...	...	...	...	
Okehampton .	1.52	.54	1	9	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs. .	1.12	.25	28	15	61.4	51.7	64.6	58.2	40.0	72.0	79	5.6	191.2	2		
Plymouth Wtshd. Head Weir .	1.64	.30	14	14	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross.	1.30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown .	2.24	.38	1	14	54.2	47.7	59.9	53.8	36.0	69.0	84	6.5	...	...	...	
Roborough (S. Devon)	1.20	.23	29	14	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	1.50	.44	28	11	...	49.4	62.0	55.7	36.0	69.0	...	...	183.0	5		
Salcombe .	1.17	.46	28	11	...	51.0	64.0	57.5	40.0	71.0	...	...	197.1	4		
Sidmouth .	1.50	.44	24	11	...	50.3	63.9	57.1	38.0	70.0	...	...	...	...	...	
Simonsbath .	2.37	.57	28	15	...	...	...	...	35.0	67.0	...	...	...	...	...	
South Brent .	1.53	.39	14	12	...	...	...	...	...	...	...	...	...	...	...	
South Molton .	1.53	.38	13	12	...	...	...	...	...	...	...	...	...	...	...	
Tavistock .	1.73	.31	1	16	60.1	48.7	65.0	56.8	34.0	75.0	78	5.2	...	...	...	
Teignmouth Obs.	1.54	.45	28	11	57.9	51.2	64.8	58.0	41.1	76.8	85	4.6	165.6	3		
Teignmouth (Benton)	1.32	.38	28	12	57.8	50.6	64.7	57.6	39.9	74.2	86	6.9	...	...	...	
Torquay Obs. .	0.89	.32	28	10	59.4	52.7	65.0	58.9	40.9	72.1	82	4.0	192.5	3		
Torquay Wtshd. Kennick .	1.03	.33	28	13	...	...	...	...	...	...	...	...	...	...	...	
Laployd .	1.45	.39	1	13	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	1.09	.25	1	13	...	...	...	...	...	...	...	...	...	...	...	
Torrington .	1.46	.34	14	14	...	42.5	60.4	51.5	32.0	71.0	...	...	...	...	...	
Totnes (Berry Pomeroy)	1.24	.40	1	8	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe .	1.46	.27	28	13	59.9	53.0	65.0	59.0	48.0	74.0	77	3.6	179.5	5		

OCTOBER, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.					
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.				
Abbotskerswell .	ins.	ins.	...	...	deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.	...
Ashburt'n(Druid)	6.35	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburton	7.34	1.64	23	19	51.2	46.0	56.2	51.1	37.0	62.0	88	5.9	...	...
(West Street)	6.72	1.73	23	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	3.59	.39	1	15	49.2	42.8	57.2	50.0	30.0	65.0	80	5.0	...	...
Bere Alston	4.83	.80	27	21	47.8	41.9	56.9	49.4	29.0	63.0	...	...	...	...
Copplestone Ho.	4.54	.89	23	19	...	...	...	...	...	...	...	...	...	...
Cowsic Valley	5.30	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton	4.77	.97	23	18	49.6	42.7	56.8	49.8	28.0	65.0	92	8.0	56.7	9
Devil's Tor	5.60	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	5.36	1.03	23	17	50.9	44.7	56.8	50.7	30.0	64.0	...	...	...	...
Holne .	6.77	1.35	23	20	...	...	...	...	...	...	...	...	...	...
Huccaby	7.41	1.45	30	16	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	3.68	.75	28	20	51.5	48.3	57.4	52.8	41.0	65.0	...	...	86.9	7
Leusdon .	7.59	1.45	23	20	...	...	...	...	...	...	...	...	...	...
Lynmouth .	3.91	.68	22	19	...	48.0	55.0	51.5	42.0	62.0	...	...	...	...
Newton Abbot	4.08	.60	23	18	...	...	...	...	...	...	...	...	...	...
Okehampton	4.04	.58	23	18	...	...	...	...	...	...	...	...	...	...
Plymouth Obs.	5.71	1.61	23	18	56.6	46.6	58.5	52.6	35.0	64.0	83	7.0	91.5	5
Plymouth Wtshd.														
Head Weir	5.99	1.15	30	20	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	6.90	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown	6.89	1.18	27	20	47.4	42.2	52.3	47.2	34.0	59.0	90	9.0	...	...
Roborough														
(S. Devon)	6.04	.95	23	21	...	...	...	...	...	...	...	...	...	...
Rousdon .	7.24	2.22	23	18	...	44.5	55.3	49.9	34.0	61.0	...	...	71.9	6
Salcombe .	4.60	1.16	23	20	...	46.0	57.0	51.5	36.0	62.0	...	...	94.5	8
Sidmouth .	8.20	2.68	23	16	...	45.8	56.6	51.2	35.0	63.0	...	...	...	...
Simonsbath	6.64	.94	31	20	...	...	...	...	29.0	56.0	...	...	...	...
South Brent	7.35	1.88	23	19	...	...	...	...	...	...	...	...	...	...
South Molton	4.31	1.43	23	19	...	...	...	...	...	...	...	...	...	...
Tavistock .	4.47	.75	30	18	50.7	42.9	57.0	50.0	29.0	64.0	82	7.0	...	...
Teignmouth Obs.	5.34	1.43	23	21	50.8	46.8	58.0	52.4	34.5	66.5	87	6.5	75.1	5
Teignmouth	5.13	1.44	23	25	51.4	46.7	57.0	51.8	34.7	64.6	88	7.6	...	...
(Benton)														
Torquay Obs.	5.09	1.36	23	19	52.5	47.6	57.6	52.6	37.1	63.8	85	6.5	70.0	5
Torquay Wtshd.														
Kennick .	6.22	1.33	30	21	...	...	...	...	...	...	...	...	...	...
Laplovd .	5.58	1.00	23	19	...	...	...	...	...	...	...	...	...	...
Mardon .	6.41	1.17	23	21	...	...	...	...	...	...	...	...	...	...
Torrington .	4.40	1.13	23	20	...	37.8	51.5	44.7	26.0	59.0	...	...	...	...
Totnes	6.01	1.36	31	18	...	...	...	...	...	...	...	...	...	...
(Berry Pomeroy)														
Woolacombe	3.77	.71	23	17	52.8	48.0	57.0	52.5	40.0	65.0	83	5.5	88.8	7

NOVEMBER, 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.								Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.							
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.						
Abbotskerswell .	ins.	ins.	..	...	deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.	...	...	
Ashburt'n(Druid)	3.38	...	..	...	...	...	...	...	...	...	...	...	...	...	...	
Ashburton	4.09	1.42	11	13	40.3	35.1	47.0	41.0	25.0	56.0	82	5.2	...	...	...	
(West Street)	4.10	1.52	11	...	...	...	...	...	...	...	...	...	...	...	...	
Barnstaple .	3.16	.85	11	15	37.9	33.8	47.1	40.4	20.0	56.0	83	7.0	...	...	...	
Bere Alston	3.54	1.50	11	13	37.2	31.9	46.0	38.9	20.0	55.0	...	...	...	...	...	
Coplestone Ho.	2.37	.58	9	12	...	...	...	...	...	...	...	...	...	...	...	
Cowsic Valley	4.80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cullompton	2.50	.85	11	16	36.8	30.4	45.6	38.0	19.0	57.0	90	7.0	95.6	8	...	
Devil's Tor	3.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Exeter .	1.90	.66	11	11	39.8	33.2	45.0	39.1	23.0	57.5	...	...	...	...	...	
Holne .	5.38	1.77	11	13	...	...	...	...	...	...	...	...	...	...	...	
Huccaby .	4.24	1.26	11	11	...	...	...	...	...	...	...	...	...	...	...	
Ilfracombe .	2.32	.38	9	13	43.0	37.9	48.0	42.9	30.0	57.0	...	...	106.5	6	...	
Leusdon .	4.30	1.43	11	12	...	...	...	...	...	...	...	...	...	...	...	
Lynmouth	3.87	1.21	11	11	...	37.8	44.2	40.5	29.0	54.0	...	...	...	...	...	
Newton Abbot	2.45	.67	11	13	...	...	...	...	...	...	...	...	...	...	...	
Okehampton	3.37	.69	11	11	...	...	...	...	...	...	...	...	...	...	...	
Plymouth Obs.	3.18	1.20	11	12	42.9	36.9	47.7	42.3	25.0	57.0	82	6.5	102.4	5	...	
Plymouth Wtshd.																
Head Weir	4.68	1.65	11	13	...	...	...	...	...	...	...	...	...	...	...	
Siward's Cross.	4.70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Princetown	6.04	1.80	11	14	36.5	31.2	42.1	36.6	21.0	52.0	89	7.0	...	...	...	
Roborough																
(S. Devon)	3.92	1.65	11	13	...	...	...	...	...	...	...	...	...	...	...	
Rousdon .	2.73	1.13	11	11	...	33.2	45.0	39.1	26.0	54.0	...	...	114.0	7	...	
Salcombe .	2.73	.84	11	13	...	37.0	47.0	42.0	28.0	56.0	...	...	101.0	5	...	
Sidmouth .	2.30	1.84	11	...	...	31.5	42.1	36.8	21.0	52.0	...	...	...	...	...	
Simonsbath	5.23	1.72	11	16	...	...	...	...	18.0	51.0	...	...	...	...	...	
South Brent	5.37	2.19	11	13	...	...	...	...	...	...	...	...	...	...	...	
South Molton	2.76	1.04	11	13	...	...	...	...	...	...	...	...	...	...	...	
Tavistock .	3.88	1.22	11	15	39.9	33.0	47.1	40.2	20.0	55.0	83	6.2	...	...	...	
Teignmouth Obs.	2.74	.92	11	10	40.1	37.4	47.5	42.5	24.5	57.0	86	5.3	100.8	7	...	
Teignmouth																
(Benton)	2.54	.88	11	11	39.9	35.5	47.8	41.6	26.0	55.6	86	6.7	...	...	...	
Torquay Obs.	2.70	.95	11	11	42.4	37.2	47.8	42.5	28.3	56.0	81	5.5	104.5	7	...	
Torquay Wtshd.																
Kennick .	3.04	.90	11	13	...	...	...	...	...	...	...	...	...	...	...	
Laplovd .	3.08	.75	11	13	...	...	...	...	...	...	...	...	...	...	...	
Mardon .	3.59	1.06	11	14	...	...	...	...	...	...	...	...	...	...	...	
Torrington	3.48	.89	11	11	...	27.0	39.5	33.3	17.0	51.0	...	...	...	...	...	
Totnes																
(Berry Pomeroy)	3.12	1.05	11	11	...	...	...	...	...	...	...	...	...	...	...	
Woolacombe	2.53	.81	11	12	42.4	38.0	48.0	43.0	29.0	56.0	79	4.7	106.3	7	...	

DECEMBER, 1915.

STATION	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.					
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.				
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.	
Abbotskerswell .	11.76	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashburt'n(Druid)	15.51	2.15	14	28	43.9	39.7	49.4	44.5	31.0	55.0	89	7.4	...	...
Ashburton														
(West Street)	14.89	2.17	14	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	7.73	.92	23	27	44.5	43.5	50.7	47.1	31.0	57.0	89	7.0	...	...
Bere Alston	10.60	1.48	14	28	43.6	38.9	49.8	44.3	2.70	55.0	...	...	...	...
Coplestone Ho. .	7.89	.79	9	28	...	...	...	...	...	...	...	...	...	...
Cowsic Valley	18.65	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton	8.06	.90	14	28	43.4	38.3	49.4	43.9	26.0	56.0	91	8.1	32.4	16
Devil's Tor	13.10	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	6.87	.65	3	26	44.6	40.3	49.5	44.8	28.0	57.0	...	...	...	...
Holne .	18.21	2.88	14	28	...	...	...	...	...	...	...	...	...	...
Huccaby	14.97	1.95	14	27	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	7.00	1.07	14	23	47.1	46.6	50.9	48.3	32.0	58.0	...	...	24.6	14
Leusdon .	16.74	13.7	26	27	...	...	...	...	...	...	...	...	...	...
Lynmouth .	8.96	.95	14	26	...	38.0	45.0	41.5	30.0	54.0	...	...	...	...
Newton Abbot	8.78	.66	26	28	...	...	...	...	...	...	...	...	...	...
Okehampton	10.48	1.14	14	27	...	...	...	...	...	...	...	...	...	...
Plymouth Obs.	9.84	1.21	14	27	47.4	42.2	50.6	46.4	31.0	55.0	88	8.4	38.1	11
Plymouth Wtshd.														
Head Weir	14.59	2.74	14	27	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	14.50	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown	21.29	3.95	14	28	41.0	36.8	45.6	41.2	27.0	51.0	97	9.5	...	...
Roborough														
(S. Devon)	12.15	1.82	14	27	...	...	...	...	...	...	...	...	...	...
Rousdon .	8.01	.95	14	28	...	39.2	48.3	43.8	29.0	53.0	...	...	48.6	7
Salcombe .	8.68	1.08	14	26	...	42.0	50.0	46.0	31.0	55.0	...	...	38.4	9
Sidmouth .	8.40	1.00	14	27	...	40.5	50.1	45.3	29.0	55.0	...	...	...	...
Simonsbath	16.23	2.40	14	28	...	...	...	...	24.0	51.0	...	...	...	...
South Brent	16.88	2.91	14	26	...	...	...	...	...	...	...	...	...	...
South Molton	10.75	1.12	23	28	...	...	...	...	...	...	...	...	...	...
Tavistock .	11.88	2.00	14	29	44.1	39.0	49.4	44.2	25.0	55.0	93	9.0	...	...
Teignmouth Obs.	9.04	1.00	26	26	45.9	41.7	50.8	46.3	32.5	56.5	88	7.8	46.6	9
Teignmouth														
(Benton)	8.18	.90	26	28	44.9	39.5	50.0	44.7	29.7	55.1	89	7.8	...	...
Torquay Obs.	9.31	1.03	26	27	46.4	42.2	51.1	46.7	31.5	56.0	88	7.0	43.1	10
Torquay Wtshd.														
Kennick .	11.09	1.12	26	28	...	...	...	...	...	...	...	...	...	...
Laployd .	12.68	1.31	26	28	...	...	...	...	...	...	...	...	...	...
Mardon .	12.89	1.51	26	28	...	...	...	...	...	...	...	...	...	...
Torrington.	10.03	1.05	9	27	...	33.8	43.7	38.8	22.0	53.0	...	...	...	...
Totnes														
(Berry Pomeroy)	11.63	1.38	14	25	...	...	...	...	...	...	...	...	...	...
Woolacombe	6.37	.77	9	26	46.7	43.0	50.0	46.5	34.0	56.0	85	6.6	30.2	16

SUMMARY FOR WHOLE YEAR 1915.

STATION.	RAINFALL.				TEMPERATURE IN SCREEN.						Humidity, 9 a.m.	Cloud, 9 a.m. (0-10).	Sunshine.	Sunless Days.	
	Total Depth.	GREATEST FALL IN 24 HOURS.		Wet Days.	MEANS.				EXTREMES.						
		Depth.	Date.		Temperat. 9 a.m.	Minima.	Maxima.	Mean.	Minimum.	Maximum.					
	ins.	ins.			deg.	deg.	deg.	deg.	deg.	deg.	%	0-10	hours.		
Abbotskerswell .	47.65	...	...	152	...	...	...	...	...	...	...	...	...	...	...
Ashburtn (Druid)	60.45	2.95	16/2	194	50.1	43.5	56.0	49.8	25.0	74.0	80	5.8	...	...	...
Ashburton (West Street)	57.73	2.81	16/2	...	...	...	...	...	...	...	...	...	...	...	...
Barnstaple .	38.30	0.92	23/12	193	49.5	42.5	56.1	49.1	20.0	77.0	81	6.2	...	...	...
Bere Alston .	48.34	1.87	16/2	208	49.2	42.3	56.6	49.4	20.0	79.0	...	...	...	...	...
Coplestone Ho. .	37.08	1.02	1/7	198	...	...	...	...	...	...	...	...	...	...	...
Cowsic Valley .	76.55	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cullompton .	40.20	0.97	23/10	198	50.4	41.7	57.0	49.4	19.0	79.0	80	7.1	1441	73	...
Devil's Tor .	58.30	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Exeter .	33.40	1.03	23/10	171	51.4	43.3	57.3	50.3	23.0	80.0	...	...	...	...	...
Holne .	70.69	3.44	16/2	195	...	...	...	...	...	...	...	...	...	...	...
Huccaby .	62.62	2.95	16/2	180	...	...	...	...	...	...	...	...	...	...	...
Ilfracombe .	35.99	1.07	16/2 14/12	199	51.3	46.4	55.6	51.0	29.0	75.0	...	...	2053	71	...
Leusdon .	65.87	2.90	16/2	184	...	...	...	...	...	...	...	...	...	...	...
Lynmouth .	41.92	1.21	11/11	201	...	45.7	54.1	49.9	26.0	72.0	...	...	...	...	...
Newton Abbot .	38.71	1.31	16/2	196	...	...	...	...	...	...	...	...	...	...	...
Okehampton .	50.12	1.14	14/12	176	...	...	...	...	...	...	...	...	...	...	...
Plymouth Obs. .	43.91	1.61	23/10	196	53.2	45.2	56.4	50.8	25.0	75.0	81	7.2	1656	49	...
Plymouth Wtshd. Head Weir	63.38	2.74	14/12	210	...	...	...	...	...	...	...	...	...	...	...
Siward's Cross.	66.73	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Princetown .	87.33	3.95	14/12	207	45.9	40.3	51.4	45.9	21.0	71.0	87	7.6	...	...	...
Roborough (S. Devon)	54.86	2.20	16/2	206	...	...	...	...	...	...	...	...	...	...	...
Rousdon .	39.74	2.22	23/10	177	...	42.1	54.4	48.3	25.0	74.0	...	...	1602	61	...
Salcombe .	39.88	1.28	16/2	183	...	44.8	56.2	50.5	26.0	73.0	...	...	1789	67	...
Sidmouth .	40.80	2.68	23/10	183	...	43.7	56.0	49.9	23.0	77.0	...	...	...	...	...
Simonsbath .	70.25	2.40	14/12	223	...	...	...	...	17.0	69.0	...	...	...	...	...
South Brent .	74.21	2.91	14/12	191	...	...	...	...	...	...	...	...	...	...	...
South Molton .	49.83	1.43	23/10	188	...	...	...	...	...	...	...	...	...	...	...
Tavistock .	53.64	2.00	14/12	219	53.6	41.7	56.3	48.8	20.0	76.0	81	7.5	...	...	...
Teignmouth Obs.	40.15	1.43	23/10	183	50.4	45.4	56.9	51.2	25.1	76.8	81	6.1	1628	57	...
Teignmouth (Benton)	37.29	1.44	23/10	199	50.0	43.8	56.4	50.1	26.0	74.2	86	7.2	...	...	...
Torquay Obs. .	41.43	1.70	16/2	188	51.5	45.7	56.9	51.3	27.1	73.4	80	6.3	1704	53	...
Torquay Wtshd. Kennick .	45.22	1.80	16/2	207	...	...	...	...	...	...	...	...	...	...	...
Laployd .	50.56	2.16	16/2	204	...	...	...	...	...	...	...	...	...	...	...
Mardon .	50.04	2.10	16/2	210	...	...	...	...	...	...	...	...	...	...	...
Torrington .	41.78	1.13	23/10	200	...	37.1	51.8	44.5	17.0	76.0	...	...	...	...	...
Totnes (Berry Pomeroy)	49.24	1.60	13/5	167	...	...	...	...	...	...	...	...	...	...	...
Woolacombe .	34.79	1.22	16/7	197	50.9	45.9	55.6	50.8	29.0	74.0	82	5.6	1584	83	...

THE ATHELSTAN MYTH.

BY J. J. ALEXANDER, M.A., J.P.

(Read at Plymouth, 19th July, 1916.)

THE personality of Athelstan, eldest grandson of Alfred the Great, is for students of history a singularly attractive one. He seems to have inherited many of Alfred's noble qualities: his piety, his humility, his fortitude, his sympathy with learning, his devotion to the welfare of England and the happiness of its people.

Unfortunately, however, the accounts of his reign which have been preserved are all too scanty; and, as is usual with national heroes whose careers have not been adequately recorded, tradition has been busy with his name, and has ascribed to him deeds which he probably never performed and never even attempted to perform.

Let us sum up briefly what we learn about Athelstan from the most authentic sources, the early chronicles¹ and the charters of his time.² He was born about 895, some five years before the death of Alfred. He succeeded his father, Edward the Elder, in August or early in September, 924. He died on 27th October, 940.

His military exploits are mainly connected with the North. In 926 he annexed Yorkshire, having expelled its Danish ruler, and in the same year he defeated an alliance of Scots and Welsh, among the latter of whom was Howel, king of Dyfed, described in the Anglo-Saxon Chronicles as "King of the West Welsh." This war was terminated by the Treaty of Eamot, a village on the Yorkshire borders. In 934 he successfully invaded Scotland, and in 937 he defeated a strong combination of Scots and Danes, the latter from Ireland, at Brunanburgh. The site of the

¹ A.-S. Chronicles; Ethelwerd; Florence of Worcester; William of Malmesbury; Simeon of Durham.

² Birch *CS.* 659-747; Kemble *CD.*; Crawford Collection IV and VII.

battle is uncertain, but the most probable conjecture places it just north of the Solway Firth;¹ the incidents have been preserved in a famous Saxon poem.

Athelstan was a capable administrator and a good friend of the clergy. He held his Witan at frequent intervals, the place of summons being constantly changed. In the Easter of 928, the Witan was held at Exeter, and that city was also the recipient of various benefits. A mint for coinage was established there by him. Several grants were made to the Exeter churches and monasteries. In 931 he partitioned the See of Crediton into two bishoprics with the Tamar as their dividing line, and appointed Conan to the newly formed bishopric of St. Germans.² Eadulf, the Bishop of Crediton, was in 933 granted enlarged privileges, probably as a consolation for his loss of diocesan territory.

For the personal touches we are indebted to William of Malmesbury, who tells us of the king's flaxen hair and graceful appearance, his affable manners, his skill as a negotiator of marriage alliances with foreign princes, as well as some doubtful matters of court gossip. He also states—and this concerns us most—that Athelstan after a fierce attack expelled the West Britons “from Exeter, which till that time they had inhabited with same privileges as the English, fixing the boundary of their province on the other side of the river Tamar, as he had appointed the river Wye to the North Britons.” The monarch then “fortified the city with towers and surrounded it with a wall.” William goes on to inform us that he gathered from conversation with the natives how “many noble traces of him are to be seen in that city, as well as in the neighbouring district.”³

In analysing these brief quotations from William, there are three things to be remembered. In the first place, William was writing after an interval of two centuries without any known intermediate authority other than monastic and local tradition. In the second place, he was a picturesque narrator whose tale lost nothing in the telling. In the third place, he had a special reason for extolling the deeds of Athelstan, who was a generous benefactor of Malmesbury Abbey, and was buried under the altar there.

¹ Hodgkin, *History of England to 1066*.

² Crawford Coll. VII. ³ *Gesta Regum*.

The driving out of the Britons may have meant little or much. What it probably did mean was that Athelstan, having received complaints of racial animosities in Devon, tried to solve the difficulty by inducing the dissatisfied Britons to remove into Cornwall, where they were to enjoy their own customs under a separate provincial administration. This concession would be similar to that allowed by Alfred and his successors to the Danes in the north-east. The "fierce attack" is perhaps a rhetorical version of stern measures meted out to a few of the worst offenders.

William's account can thus be reconciled with Athelstan's known beneficence and love of peace. The king found Exeter weakened and distracted: weakened by the Danish ravages of fifty years before and distracted by local quarrels. He gave the city military security, took steps to increase its commercial prosperity, and settled the quarrels by removing one of the contending factions. He found the Britons discontented: he gave them a bishop of their own, and compelled them to live under his jurisdiction. It is interesting to observe how he rested his authority on the support of the Church, and readers of his charters may have noticed that he was wont to take a highly devout view of his kingly responsibilities, those who disobeyed his commands being warned that they thereby incurred the danger of everlasting perdition.

We can picture then the real Athelstan, just and merciful to his subjects, brave and successful against his enemies, but always pacific in his aims. So far as the West Country is concerned he was a generous benefactor and a promoter of concord. He was certainly not a man of blood.

We will pass now to the Athelstan of the local antiquaries, the conqueror of Cornwall and Western Devonshire. The accounts of this conquest are conflicting, as accounts of what never happened are likely to be. It seems that Athelstan after driving the Britons from Exeter, was opposed by an army from Cornwall under a king named Howel, who fought at Haldon, or, as the ingenious etymologists name it, Howel Down, where the Cornish were defeated. Athelstan thence pushed westward, overthrew the remains of Howel's army at Bolleit, near the Land's End; and then invaded and subdued the Isles of Scilly.¹ Various traditions have added other

¹ Daniell, *History of Cornwall* (Third Ed., 1894).

incidents, such as Athelstan's triumphal entry into Barnstaple, and the erection of a palace for him at Umberleigh, "which he bequeathed to John of Gaunt."

When we approach the question of the date, the narratives are still more conflicting. Freeman,¹ professing to follow William of Malmesbury, who gives neither date nor conquest, adopts 926 as the year. One or two writers say 928, the year of the Exeter Witenagemot; Hooker gives 932; Whitaker 935; C. S. Gilbert 936; Carew 937; Polwhele 938; in Hassell's Chart the date is 939. Borlase, with a fine impartiality, mentions 936 and 938. Other dates are given, some before Athelstan was born, some after his death. One gets the impression that the conquest may have been an annual fixture, and that the paucity of events recorded during Athelstan's reign is due to his practice of periodically touring the Western Counties with a company of military performers. A few of these inventive chroniclers seem to confirm this by locating near Axminster the site of the battle of Brunanburgh, fought presumably with an imported stage army of Scots and Danes.

We shall search in vain for any confirmation of this conquest from early sources. Four reasons are alleged for believing in it. The first is the possible existence of local traditions which escaped the notice of all the earlier writers.² Now William of Malmesbury visited Devon; he had, as he states himself, extensive conversations with the inhabitants in general and with his brother monks in particular. An event of such importance in the life of his great hero, Athelstan, could not have escaped *his* notice. Also Dunstan, who grew up during Athelstan's reign, was, less than fifty years after, called in to advise King Ethelred the Unready on a dispute between the Devon and Cornish bishops touching certain manors, the property of the Church, in Cornwall.³ He describes Athelstan's division of the sees, but says nothing about his having waged any war or completed any conquest in the West; what he does state is that Egbert reduced the Cornish to subjection, and gave a tenth part of their lands to the church, the natural thank-offering of a victorious monarch.

The second reason is the description in the Chronicles of Howel as "King of the West Welsh." He is coupled in

¹ *Old English History*. See Note A.

² See Note B.

³ Crawford Coll. VII.

the story with Constantine of Scotland and Owen of Gwent in one place, and in another place with Cledauc and Juthwal of North Wales. He also signs charters with Juthwal and several others, described as "sub-reguli." Now there was a well-known king of Dyfed, Howel the Good, who reigned from about 915 to 951. Dyfed was between the Teify and Towy, that is, in the south-west of what was then left of Wales. If there had been also a Howel in Cornwall, some definite distinction would have been given to each Howel whenever his name occurred, and it is hardly conceivable that the Cornish Howel and not the Welsh Howel would have been found fighting on the borders of Northumbria in 926. How could he have crossed West Saxon territory without being stopped?

The third reason is the statement in the *Annals of Wales* that Dungarth, King of Cornwall, was drowned in 875. This does not prove that there was a Cornish king fifty years later. There was a King of Mercia, Burhred, in 874, but Mercia was subject to Wessex from 829.¹ Possibly Dungarth, like the last kings of Mercia, was allowed to retain the nominal title; perhaps he had obtained this courtesy by submitting promptly to Egbert in 838.

The last reason is based on William of Malmesbury's allusion to Athelstan "fiercely attacking" the Britons of Exeter. This, as we have already seen, need not have meant more than the quelling of a local disturbance. And William of Malmesbury is a two-edged sword. For if he is to be faithfully followed, then we must accept his account of Egbert, who, according to him, "first manifested his power against those Britons who inhabit that part of the island which is called Cornwall, and having subjugated them, proceeded to make the Northern Britons, who are separated from the others by an arm of the sea, tributary to him."² Let us note the distinction here conveyed between "subjugating" and "making tributary." Even if William's last-quoted statement requires confirmation, as it certainly does, it is supported by the entries under Egbert in the *Chronicles*, the submission of Kenstec, the narrative of Alfred's visit to Cornwall and his bestowal of Cornish Manors on Asser,³ Alfred's will,⁴ Edward the Elder's redistribution of sees in 909, and Dunstan's letter to Ethelred.

¹ A.-S. *Chronicles*.

³ Asser, *Life of Alfred*.

² *Gesta Regum*.

⁴ Burch *CS.* 553.

If the extant copy of Dunstan's missive, instead of lying hidden till 1891 in a collector's cupboard, had been made available for public perusal fifty years earlier, there might have been now no necessity to disprove the story of Athelstan's Cornish expedition. But to those who have studied closely the sources of Saxon history, and have not trusted entirely to the judgment of modern compilers, the contents of the missive can cause no surprise. What does cause surprise is that the Athelstan legend should ever have arisen, that it should have gained so much acceptance, and that it should have survived so long. Like the river Arar in a schoolboy's rendering of Cæsar, the historical critic has in this instance moved "with incredible lenity."

It is time that he moved with greater vigour. The completion of the Saxon conquest is a fact of fundamental importance in the annals of the West Country. For Athelstan's fame as a conqueror we must seek elsewhere; both Devon and Cornwall came to him as an inheritance, their final subjugation having been accomplished long before.

To those who gained the day at Hingston Down, and to the strenuous old warrior who led them, is due the credit of the achievement.

ADDENDA.

NOTE A. Freeman's references to the supposed conquest seem to imply his belief in the Western Devonshire portion of it; about the Cornish portion he is vague, and he denies the existence of the Cornish Howel.

NOTE B. There were several prominent persons in Wessex history who possessed the name Athelstan, or the somewhat confusingly similar name Alhstan. Among these were two bishops (Sherborne 817, and Ramsbury 909), four aldermen (two in 826, one in 883, and one in 963), the Danish convert of 878 (better known as Guthrum), and the Kentish viceroy of 839. The last-mentioned, who is said to have been Egbert's younger son, probably took part in his father's later Cornish campaigns, and may have been the fighting Athelstan of West Country traditions. Writers of later date than William of Malmesbury would very naturally confound him with his great-grand-nephew. See Matthew Paris (Rolls Series).

A HISTORY OF PUSLINCH.

BY J. Y. A. MORSHEAD.

Unprinted Authorities:

Puslinch Documents transcribed by J. B. YONGE.

Newton Ferrers Documents transcribed by VAUGHAN HOLBETON.

(Read at Plymouth, 19th July, 1916.)

THE estuary of the Yealm used to be a nice place. Matthew Arnold is thought to have chosen Wembury beach as the scene for his Forsaken Merman. But now there are squalid house-boats and piers and brickworks on the river and the Board of Trade has destroyed its bar. No respectable merman would visit such a spot at present, and so I ask you to come away back with me to older times.

The Celts have left few traces. Perhaps Bolventor and the 'Mis' of Misbury are words of theirs. Fishermen too are a very unchangeable class, and in a parish-council you will see them swinging their arms and denouncing their neighbours just like Mr. ——. But the political truce forbids.

Yet it was late when the Saxons arrived down here and established their Crown demesnes at Yealmpton and Ermington. They granted away the rural district partly in small estates to small followers, partly in great patches to greater ones. But there is some attraction about the sea, and a new town sprang up on Noss creek nearly as big as its two older neighbours. Coffleet and Kitley creeks too had each a manor at its head. Only the top of the whole estuary remained uninhabited, part of the waste of Newton. And so it continued while Earl Mortain was ousting Edmer from all his great patch between Yealm and Erme, attaching it to the Honour of Trematon, and subinfeuding to Valletort.

Waste was the right word for it. To judge by its later field names none (except perhaps West-wood) was ever timbered. Brushers-hill, Broom-park, Rye-lands,

Fernhayes,¹ Furzy-down, Head-down all suggest an open country. But by 1200 A.D. the Common Law which forbade new enclosures was breaking down. Hard landlords were selling and overcrowded tenants buying pieces of waste rightly the property of their wearied plough-oxen. Puslinch has been spelt in 1236 Puse-lynch, 1299 Poselynche, 1303 Pyse-lynche, 1390 Puse-lynghe, 1450 Posse-lynch, 1588, etc., Pos-lynch, Pus-nedge, Pust-neged and sixty-three other ways, including Puzzle-witch, while the best labourers still call it Puz-ledge. Personally I thought it was like Peas-land and Pish-lynch near Sidmouth, which Mr. Hutchinson derived from 'pease.' Professor Skeat however wrote to me 'that the oldest form is the safest, and that "se" is a debased A.S. genitive whose nominative cannot certainly be traced.' Let us call it Pugh. It means,² therefore, 'Pugh's ploughland.' He was the first to break ground here.

Pugh's farming clearly prospered. Things generally happen some years before they get on to the records, and as the earliest Inqu. p.m. here shows as demesne the old farm-house, with 50 acres arable (probably east of house and reaching to Lang-stone ferling, now Lang's furlong; a tall rock is a common limit), 16 acres pasture (probably the marsh), and 200 acres waste, a mill 200 yards east of the present Puslinch Bridge, and a dovecote, still at the farm, the original lynch must have been approximating to this area. At any rate it got so large that when Valletort sold to Ferrers (1236) the purchaser made it a contributory to the Knight's fee payable from Newton.

But this demesne was not all. Pugh was certain to be imitated. About 1270 Ferrers had sold to T. de Veteri ponte,³ and such a string of freeholds (Coleton, Ayssecumb, Presteton, Blowedonne and Crewebera) are recorded later that some at least must have been formed before this time. A 'villa' had also sprung up at Torre, which clearly had by 1280 two⁴ generations of villeins upon it. One tenement was now enfranchised to Holbeton, thus starting that family in the course which in time made them lords of the manor of Newton.

About 1290 Roger de Langford (Ugborough) bought in here. He was in the King's service, sheriff, etc. Puslinch

¹ Now 'Parsons Headon.'

² Cf. 'Pews-ey,' 'Py-worthy,' etc.

³ v. Appendix A.

⁴ 'Edwy pater tenuit.'

must now have grown to the size required for a Mortain Fee,¹ say, 360 acres. The demesne paid one quarter, and the free-tenants the rest. Apparently this was one of the eleven Fees owed by Ferrers and transferred hither by him from some other estate, for Langford to pay. The Langfords were here for three descents, but they were busy men who left their lands for an agent to manage. At first this was I. de Coleton, and later John de Poselynche. They sold to him, by a deed witnessed by T. de Gorges, their Trematon Superior, & various Knights at Godeshulle, Isle of Wight, 1353. Perhaps they were on the road to Poitiers, and Poselynche had lent his landlord money for his outfit.

The deed was to John, Roger his son, and Anne Roger's wife. There is no 'maritagio' in it, but we like to think she was a daughter of Langford, and if so the first of the four 'Puslinch heiresses.' There are no traces of the Black Death, or leasing off the demesne farm. Three descents followed, and then (1390) a Matilda married a W. Mohun. The second heiress.

There had been Mohuns at Ugborough, Stoke-fleming, etc., and he was not a mere adventurer, but owned lands near Altarnun. He soon died, but there were four descents from him. His widow married secondly Cornu of Lyneham and thirdly Silverlock of Harestone. His son John did not try to rival his lively mother, but contented himself with a Free-warren at Worffelhammes² (Worswell?) and an Oratory (1405) at Puslinch.³ A good churchman and sportsman. St. Toly's fell down long since—only the zealous fancy they see stones in a farm wall near. 'A serving priest did sing in the chapple & there was great oblation on St Toly's day. He had 3 fields given him therefor.' Under Henry VI folks became lawless. W. Mohun was (1442) courting the widow of Trethyneke with a daughter here when 'the Cornish party with glylves gysarines & jackes ravysshed ye dauutr into a bote. The mother with grete hew & cry held her by the cloathes & bote till ye mysdoers rowed out to a depnesse & they thawn her handes & body so she let goo & was like to be drowned ne hadde another bote graciously holpen her.' There was also a chronic feud with the king's bailiff at

¹ App. B.

² Nothing there but rabbits and they very dry-fleshed now.

³ *Bishop Stafford's Register*, 273.

Yealmpton. Mohun had a dreadful old uncle Roger who helped 'to bete him a long while, at Yealmpton.' Next (1439) year the bailiff 'broke Posselynych pound, delivered 5 beasts, pastured others in the lords wood' and killed two of his swine, and in 1440 was 'ycome into Torre with bowys & arows, uprotid hurdelys halse, destried 8 score lomb. & borwid a hors of the wyffe of Mohun (worth 7 nobles) who was broke & deyde. Harmes £15 3s.' But Mohun soon paid him back. Roger was gone, but John Upton of Newton Ferrers, gent., took a hand instead. He was courting Miss Mohun, so went up with her father and seized 'one great rethe & 2 togas worth 10s,' and of course beat the Bailiff's servant. Was this Red v. White Rose? Evidence fails, but a Royal Manor like Yealmpton would respond easily to a change of dynasty, while an Oratory-man like Mohun, who also bought a 40s. rent-charge from the Earl of Devon and lived in a district where the agricultural dinner toast was (or even still is) 'Fight & die for Courtenay' might well be Red. Tradition too kills Mohun at Tewkesbury.

Here begins the third heiress and the eight Upton descents. I. Upton was third son, but soon succeeded to the Upton estates near Launceston. He also (1463) succeeded to the Cornish quarrel. Davy Tregawke and his wife Margaret, half-sister to the girl 'in the bote,' with twenty-seven rioters broke into 'Powselynych & took 4 draughtes (tapestries?) and 1 casket jewels (£5) 8 fyres de cerito et auro &c and 20 leather bottells. Total £20.' What crimes old ladies will commit for a few family chattels. But Upton's right arm had not weakened and he beat the half-aunt till 'her life was despaired of.' By 1550 the three chapel fields had been seized by the Crown as 'for superstitious uses,' but (1557) William Upton bought them back on his own behoof. The Rector, T. Atkins, 'a young scholler from Oxford of small abellity, seduced by attornies' claimed them a few years later 'for the Gleab,' but stood dismissed with costs. In 1560 Nicholas, who had succeeded their old enemy as Bailiff of Yealmpton, so misused his position as to deflect the Yealm against the north cliff called Kymphall (Sheepstore?) and thus 'double his own marsh,' but the Crown lessee soon re-entered. As the earliest notice of Puslinch Bridge is 1566, it may have been then erected to straighten the stream. In 1588 George 'paid £20 for the Armada.' There is no proof what line the

Uptons took in the Great Rebellion, but their house was full of heraldry and Mark in 1660 was so pressed by his father's debts that we may hope he had been on the right side. These scutcheons are nine in Carewe's Scroll, mainly wives of the husbands: Mohun—Chester by the name of Hulls—Dillon—Blericke—Upton—Kirkham and Beauchamp. Two were unnamed—Chequy Or and Az. on a Chief Gules 3 Bezants is thought by Mr. F. Were to be Palmer—and the ninth Gules, a Unicorn passant regardant Or he cannot identify. I would suggest Matilda Poselynche's second husband Cornu. That is an ancient coat.

By 1718 the Upton family was ended in another heiress and the Yonges first appear. Tradition makes them a Norfolk family which settled at Bristol as merchants. Thence one became Mayor of Lyme and the ancestor of the two Whig Members whom George II hated so. Another was Tythe-farmer for the Dean and Chapter in East Devon, and a third may have come to Plymouth. At all events there was soon a naval surgeon there whose son and grandson¹ followed the same profession, and the latter has left a diary almost as good as Pepys'. He took one civilian voyage under a quaint contract with the Newfoundland fishing-fleet, and saw the 'Penguins' (Great Auks) with eyes unconscious of their fate. It is a pity he did not embalm a few, as he did Sir Cloudesley Shovel later. They would be worth £500 a piece now. Of his politics there is no manner of doubt. His portrait presides over the Puslinch dining-room with an Eikon Basilike in his hand. His son married Mary Upton, and began the family of seven descents which still lives here.

They understood feudalism better even than the Domesday barons did. By sales of the scattered Cornish lands of Mohun and Upton and the aid of the old Doctor's guineas they bought the advowson of Newton Ferrers, repurchased Ashcombe and the other freeholds of their own manor, and formed the whole into a compact estate. They also built the present house on a knoll 200 yards east of the old one. I cannot find the name of the architect, but the building is very like Stedcombe. The bricks were home-made in the Wilderness, and the roof leads have been admired both for quality and workmanship. There came no such plumbers into the county, nor are seen unto this

¹ Cf. 'Diary.'

day. They also built something less admirable, a sham pagoda (now fallen), to break the sky-line of Headdon Wood. They had a taste for adventures. One (1732) was bold enough to rent from the Crown a right to fish below Broad-oaze—but 'at midnight 20 persons came with horses & dung-pots & picked his oysters in the Yalme. 3 were taken & 'tis like they will go to gaole.' 'Tis also like that when they came out they repeated their offence. Another (1788) employed '3 tynners of Holne to cut & pitch for him a pair of Tin-bounds called the New-adventure bounds.¹ The Head-weare near below Torr-bridge. The 4 Northern bounds in Yalnton ending below the fish house. The Southern down Raugh Tarrs lane² past the Pound. The Water-leat & Tail-bound outside Broompark gate.' Only there was no tin. A few years later arose The Wicked Widow. She was a 'high woman of great family,' so everything looks promising till we get to the facts. Alas, all the poor lady did was at the sale of her late husband's chattels 'to point out every minutest article to the appraisers, and bid upon the heir most amazingly, esp. for his Aunt Duke's chairs wh he particularly wanted, & then had the grates pulled out & re-weighed 'em.' Never was a reputation for iniquity acquired upon more trivial grounds. Other visitors here seem to have enjoyed themselves better. A Mrs. Taylor of London writes: 'I should like to see my daughters of a more contented spirit, though of course Otterton [Vicarage] is a great shrink after Puslinch. And what is this I hear, that my girls walk unattended before breakfast? Fie, my dear girls, are there no bad men in the lanes?' One can imagine how they tossed their heads at poor mamma's hopelessly Early Georgian ideas. But mothers are always right. Before long they did run against two very bad men indeed, who promptly married them, and they lived (without deserving it) happy ever afterwards.

But we are approaching the nineteenth century and must stop anecdotes. Puslinch is not an exceptional place. A Government³ Report says: 'Nowhere in England are there a greater number of gentry than in the South-hams, in harmony with each other & the yeomanry & with attention to their dependents & the poor.' All this in 1794—the

¹ Confirmed the spelling of Bolventor into Bold Venture.

² Prob. destroyed the old Mill.

³ R. Fraser, *View of Devon for Bd. of Agriculture*, 1794, pp. 17–68.

worst year of the Revolution. Earl Mortain's policy of small fees stands justified by its results here to this day. There was only one blot. 'Their syder is of an attractive appearance but 'tis said to be adulterate with turnip-juice.'

As to Forestry I will quote from a Will of 1797. 'I leave my old blind servant Stephen Knight £50. He will be very useful in looking after the plantations as I wish the Broompark coppice not to be felled but thinned out for timber trees.' This man had a marvellous sense of locality and touch and has left three descents of keen-eyed estate carpenters. Even now there is a son coming on. There is a professional controversy whether timber can be grown from the oak-stools—and both parties cite Broompark. I should say the Noes had it. The oak there should be bigger by this time.

As to Natural History. Most common rare birds have been obtained and stuffed here, but the only two special cases are a white-headed harpy and a woodchat. An eighteenth-century game-list shows more woodcocks than pheasants and hares than rabbits. The large winter rookery began in a few elm trees by the old house, and gradually migrated to Headon Wood, leaving a few old hands till 1860, when they too left. In three years the trees were falling from decay. It is curious how seldom among the present myriads you see a piebald one. As to animals, a marten was killed *circa* 1830 in West Wood and skinned for ladies' cuffs. Another seen but escaped in Collaton Wood *circa* 1860. In one bottom the clay is specially yellow and there are always two or three rabbits of that colour. As to fish. These are normal, except a 'Royal' sturgeon was once stranded by the tide. Some labourers forgetful of their Blackstone's Commentaries chopped it up with spades, and it formed a tea for many a humble home.

As to Literature. The traditions of the place have been mainly clerical, and since the 'Curris Triumphalis' of the old Doctor (a eulogy on turpentine as a styptic), little was done before those transcripts by J. B. Yonge to which I am so largely indebted. He was an antiquarian before that habit grew fashionable. I may however add one successful oration. A rumour spread some unknown man had been 'sworn in to ask for a rise of wages at Yealm-bridge upon a Natomy.' A sermon followed, and by the tears that ran down a withered cheek the Rector discovered

the culprit in his own gardener. I ought to mention also the Authoress of 'The Heir of Redcliffe.' She spent here the July holidays of a somewhat lonely youth. The reviewers have always duly noticed her consistent Churchmanship, but, as usual, they are only half right. Behind all this lurked certain Erastian memories. Friends find traces in 'Scenes and Characters' and the 'Lances of Lynwood.' She never wrote against squarsons, and found the high-schools and girls'-friendlies of her later days rather shadowy substitutes for the old patriarchal system she had seen here as a child.

Lastly for Science. In the cholera of 1830 possible parish cases were brought out here from Newton. There was 'a great jar of medicine placed in one corner and gin & water instead of cider served out in another.' Thanks to these precautions not a single death occurred. And now revolving Time has brought a greater epidemic on the land, and the old Doctor's portrait frowns on a novel scene. Lancets are superseded by thermometers, and Sick-bay stewards by Red-cross nurses.

APPENDIX A.

The date of T. de Veteri Ponte's ownership of Puslinch?

J. B. Yonge thought it was 1400 A.D. but V. Holbeton doubted. They seem of good family. In the *Pipe-rolls* of 1211 there was a Robert in the Honour of Totnes who paid on 8 k^{ts} Fees. Cf. Red-book.¹ Thomas's 2 undated grants here have mainly the same witnesses.

Holbeton deed.	Puslinch deed.
Dominus Will ^{mus} Ferare.	Dominus W. de Fferrers.
„ J. de Albamara.	„ J. de Albemare.
„ J. de Mumynglande.	W. Mumhynglan.
Walt. de „	W. de Halghwyll.
„ de Fenton.	G. Crispyn.
(cum aliis.)	(cum aliis.)

One W. Ferrers died 1283 (*Escheat Rolls*). Walt. of Memyngland is in *Testa Nevill*, 448. J. Albamera was at Flete (*Hundred Roll*, 1275). Walt. of Fentonis at Ven, Ugborough and Juror of Ermington Hundred, 1275. In 1302 same taxes paid by Henry instead (*Tax-roll for Devon*, No. 315). G. Crispyn (*Testa Nevill*, No. 193).²

¹ Dates were not affixed to Grants before 1290 (Haydn's *Dict. of Dates*, 349).

² The Record Office was shown the Holbeton deed and puts it in a 1280. All points to Vet. Ponte being here before Langford.

APPENDIX B.

Was Puslinch a Ferrers Fee?

Niuweton & Puselynych. W. Ferrers. One knights fee (*Testa Nevill*).

Pyselynych owned by Roger de Langford. 1 k^{ts} Fee (*Tax Roll*, Edw. I, 31).

Matilda Ferers pro 1 f. in Posylinch quod Roger Ferrers quondam tenuit de relevio suo 25^s (*Feudal Aids*, 398).

1330. Wm Ferers 11 fees of Tremeton—including Bere and Nyweton Ferers, Poslynych, Fardel, Cornwode, Spriddeston & others in Cornwall (*Nomina Villarum*, p. 10).

1428. T. Wise, Nich. Cotterell, R. Strechelegh, & T. Revell tenent 3 parts unius F. m. inter se et nullus $\frac{1}{4}$ part quod ab antiquo Rog. de Langford tenuit (*Feudal Aids*, 453). W. Moune tenit $\frac{1}{4}$ in Posselynck (p. 494).

All points to its being a Ferrers Fee.

TOTNES CASTLE AND WALLED TOWN.

BY H. MICHELL WHITLEY.

Read at Plymouth, 16th July, 1916.)

THE southern coast of Devon and Cornwall west of Exeter is indented with several deep estuaries forming safe harbours for shipping of all sizes, and whilst these harbours, with the exception of Exe, Teign, and the Looe estuary blocked by a bar, are deep and clear, those on the north coast are, as a rule, choked with sand driven in from the sea, which when dry is blown by the prevailing west wind over the land, forming the numerous sand-hills (or "Towans" as they are called in Cornwall), which are such a characteristic feature in the landscape of the north coast. All these principal estuaries were guarded by a castle, whose position was fixed at or near the head of the tidal portion of the river, and all these castles were of the Motte and Bailey type, the Motte being crowned in all cases, with the exception of Exeter, by a Norman shell keep erected in the 12th century.

At the head of the tidal estuary of the Exe was the Walled City and Castle of Exeter. Here there is no trace of a keep, and the probability is there never was one, the encircling wall of the castle being treated as a sufficient defence. Where the tidal waters of Dart end, stands the grand shell keep of Totnes Castle, built by Judhel de Totnes.

The next castle of the series is on the river Plym at Plympton, at the head again of the tidal waters at the time it was built. This castle stands also on the "Ridge-way" from Totnes to Plymouth. It is of a similar type to that at Totnes, but the shell keep is of an earlier date.

Crossing into Cornwall. Trematon Castle commands the estuaries of the Tamar and Lynher. Being situated between them, it has a fine Motte or mound and shell keep, but there is no castle at the head of the navigable waters

of the Tamar or Lynher rivers, Trematon being considered sufficient to guard them.

The estuary of the Looe is a small one, but Liskeard Castle stood on the river a short distance above the tidal flow. Further west the grand shell keep of Restormal Castle guards the head of the estuary of the river Fowey.

The tide once flowed up the river Fal as far as Tregony, and here again was a castle with a small shell keep, whilst a similar one stood at Truro on the Castle hill, at the head of the estuary of the river Allen. The whole of these Cornish castles were either on, or at a short distance from, the old main road along the southern coast. The north coast naturally was not as strongly fortified as the south, and shell keeps are very rare.

A castle of the Motte and Bailey type stood at the walled town of Barnstaple at the head of the navigable portion of the Taw. The north road into Cornwall was guarded by two castles at Okehampton and Lydford, both having Norman square keeps, whilst at Launceston another walled town was the very strong "Castle Terrible," with a circular keep of an unusual type, with a concentric wall around it, of very late Norman date.

Further west are the picturesque ruins of King Arthur's Castle at Tintagel, nobly seated where

"The dark cliffs beetle coldly o'er the deep,
Fringed by the lace-work of pearl-threaded foam,
That mermaids weave and hang along the shore."

There has been since the late Mr. J. G. Clark's views were published in his great work on castles¹ a divergence of opinion as to the date of the earthworks and mounds of these Motte and Bailey Castles. Clark considered they were pre-Conquest, but the later researches of such authorities as Round, St. John Hope, and Armitage, tend to show that in the majority of cases these earthworks were thrown up by the Normans and surrounded by timber palisading. A deep ditch was first dug enclosing a circular space, the material from which was thrown into the centre, forming a high mound or "Motte" with a flat top, with slopes as steep as the angle of repose of the earth allowed. Around the crown of this mound a strong timber palisade was put up with a wooden castle called a "Bretasche" in the centre, in which the lord resided. This keep was

¹ *English Mediæval Military Architecture*, 1894.

approached from the Bailey by a bridge of timber spanning the ditch. The Bailey below was constructed on a similar plan, and contained the wooden houses of the retainers, stabling for the horses, etc.

This method of construction was, as a rule, adopted for all Norman Castles with the exception of London, Colchester, Pevensey, and perhaps Bramber, and wood continued to be employed as late as the latter part of the 13th century, and although stone began to be used early in the 12th century, its use did not become general until the second half of the same. At Berkhamstead Castle the timber defences continued until 1155, when the masonry shell keep and curtain walls of the bailey were built. At Hertford Castle the masonry was not substituted for wood until 1170, and at Barnstaple Castle the timber palisading was not replaced by stone until as late as 1273. The shell keep or dungeon was a circular stone wall replacing the timber palisade around the top of the Motte, and the date of its erection may be broadly put at the whole of the 12th century, although from its convenience it was used as late as the reign of Edward III.

But the noblest Norman dungeon was the square tower which was built from about 1080 down to about the middle of the 12th century, when it commenced to be replaced by the circular tower.

In Devon we have two examples, Lydford and Okehampton. It would be hard to surpass these majestic Norman towers that still frown in stern majesty over town or vale; grim reminders of a time when a vanquished nation trembled in impotent wrath at their sight. After the middle of the 12th century the Hall, Chambers, etc., were erected in the Bailey, and the keep was abandoned by the lord as a residence.

The Castles succeeding the types mentioned had more formidable gate houses defended by circular towers, whilst strong drum towers were built at the angles of the Baileys, and Sally ports were provided in the curtain walls.

The Concentric castle was the supreme effort in the art of fortification. It consisted of a series of defences independent of each other, the capture of one not entailing that of another. The inner ward or bailey was surrounded with a high curtain wall, furnished with projecting round towers, each section of the curtain being commanded by

two, so that no assailants could attack without being exposed to a heavy fire from them.

The second ward, which surrounded the inner ward, was dominated by its high wall, so that even if taken it could not be held.

Often, too, there was a third ward outside all ; no keep is required in this type. There is no such castle in Devon, but in Wales, Harlech, Beaumaris, Conway, and Caerphilly are noble examples of the grim power of the concentric castle.

Very few English castles were erected after the close of the 13th century, and they gradually gave place to the fortified Manor House and castellated Mansion of later date.

Juhel or Judhel de Totnenesse was one of the Norman Knights who came to England with William the Conqueror and a man of great importance, as that King gave him no fewer than 107 manors (including the town of Totnes), which were part of the possessions of Edward the Confessor. The entry in the Exeter *Domesday* relating to Totnes is as follows :—

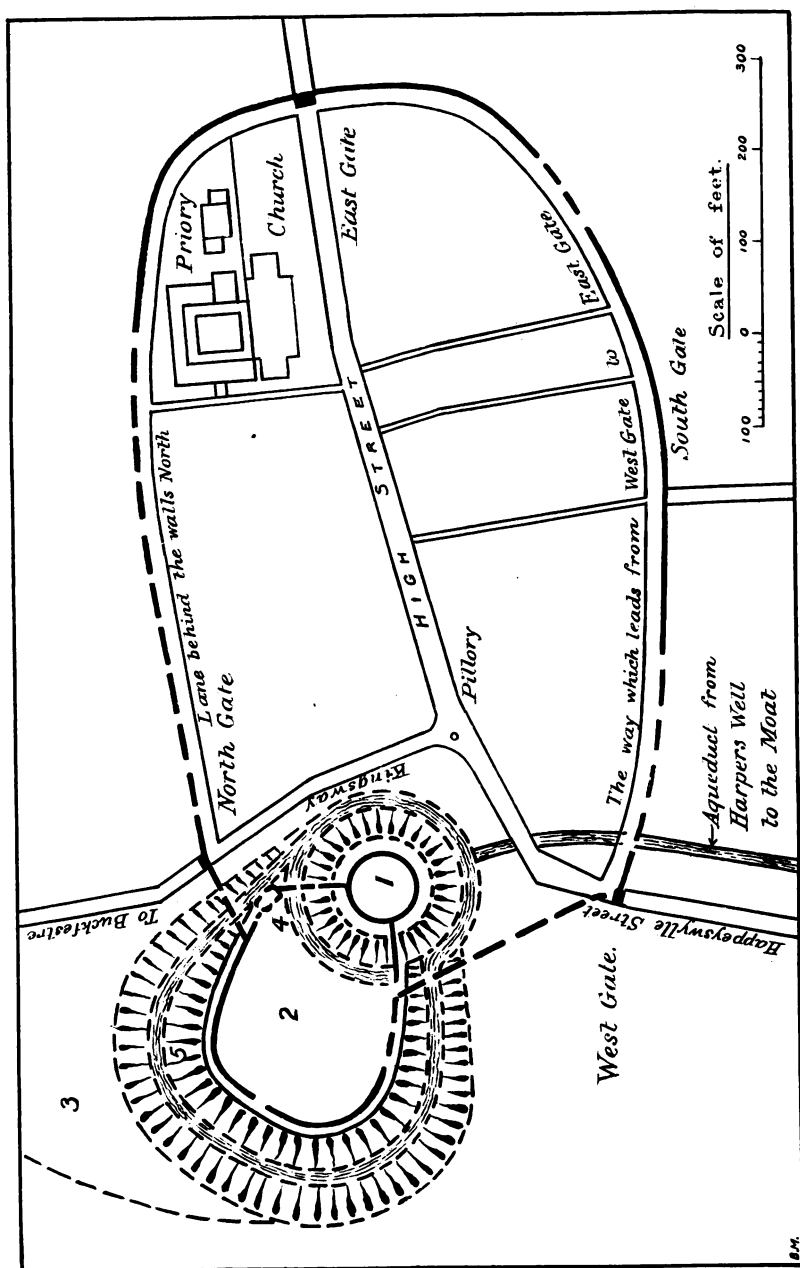
Land of Juhel in Devenesire.

“Juhel has a borough called Toteneis, which king Edward held on the day on which he was alive and dead. There Juhel has one hundred burgesses within the borough less five, and without the borough fifteen, who work the land ; and all these together render by the year eight pounds by tale, and when Juhel received it they rendered sixty shillings by weight and assay. And this town does not render geld unless Exeter renders it, and when it was wont to render geld it rendered forty pence ; and if an expedition sets forth by land or by sea, as much service is rendered between Barnestable and Toteneis and Lideford as Exeter renders.”¹

Although there is no mention of the Castle in *Domesday*, this is no proof of its non-existence at that date. Judhel undoubtedly built it in the 11th century, as there is in existence a charter of his, giving land below his castle to the Benedictine Priory which he had founded at Totnes ; a charter undoubtedly of the Conqueror's reign, as it states that he gave the gift to the monks on behalf of William King of the English.

Judhel founded the Priory of St. Mary on the north side of Totnes Church ; which he also transferred to the great Benedictine Abbey of S.S. Sergius and Bacchus at Angers,

¹ Exon. D (334) 313.



TOTNES CASTLE & TOWN WALLS

IN MEDIEVAL TIMES

1. The Keep. 2. Inner Bailey. 3. Outer Bailey. 4. Site of Gatehouse. 5. Moat.

Dotted lines show walls now destroyed.

by means of the key of the monastery and the rope of the bell, and placed the gift with his own dagger on the altar.

He held his broad lands and honours until the reign of William II, when he was banished, the King giving the barony to Roger de Novant.

It afterwards was divided into moieties, Henry de Novant and William de Brause, grandson of Judhel de Totnes, holding it in the reign of King John.

The Novants' moiety passed to the Valletorts, Brause's half was brought by marriage to the Cantelupes, who eventually became possessed of the whole.

The heiress of Cantelupe brought the lordship to Lord Zouch, and it remained in that family for several generations.

John, Lord Zouche was attainted in 1486, and the king then gave the barony to Sir Richard Edgcumbe, whose grandson sold it to Lord Edward Seymour.

The Seymours parted with it in 1655 to William Bogan, from whose family it passed to Bartholomew Jeffry, but was repurchased in 1783 by Edward, Duke of Somerset, whose family still hold it.

The Castle of Totnes is situated on a bold knoll, which rises sharply from the valley below, and is at the north-western angle of the small walled town of Totnes.

It consists of a Motte or mound crowned with a small but perfect example of a shell keep and an Inner Bailey or Base Court surrounded by a deep moat, formerly filled with water, and encircling wall, large portions of which still exist, together with an Outer Bailey, of which slight traces remain on the north.

The view from the ramparts of the keep is very fine over the estuary of the Dart, on the one hand, and looking across a wide landscape of wood and orchard meadow to the distant ridges of Dartmoor, on the other.

The Motte is a high and steep one, about 55 feet above the level of the Bailey below, and about 110 feet across at the top, with a level berm around the outside of the keep wall 15 feet wide. On the town side the Motte is now revetted by five retaining walls; the shell keep is late Norman, perfect, and probably dates from the middle of the 12th century; it is 68 feet in diameter within the enclosing wall, which is 6 feet thick. The original height of the alure above the ground level inside was about 14 feet; it is 3 feet 6 inches wide, and the parapet 2 feet 6 inches,

and 6 feet high, embattled, and the broad Merlons between the embrasures are pierced by loopholes.

The gateway into the keep, or Dungeon as it was known in mediæval times, is on the north, and of three orders with plain Norman mouldings ; it was originally 4 feet 3 inches wide, but at some period it was narrowed on the east side by a foot, thus spoiling the symmetry of the design. There was no portcullis at the entrance. To the west of this there is a doorway 3 feet 6 inches wide with a flight of steep steps leading to the alure. Thirty-three feet beyond again there is a doorway with a passage lit by a small loop, leading to a garderobe 6 feet wide, vaulted, and lit by a small loop to the field, in the projection from the wall of the shell keep, and also by a window 18 inches wide looking into the interior area.

On the eastern side of the entrance, and 9 feet distant from it, there is a doorway 3 feet 6 inches wide opening on to a flight of steps in the thickness of the wall now blocked ; from a projection on the outside of the keep wall it is probable that these steps led to a small garderobe. There are no traces at present of any buildings within the shell keep, probably these erected originally here would have been of wood. The approach from the Bailey is of rather unusual type ; a curved flight of steps on the northern side, deeply cut into the upper part of the Motte, forming a passage which could be well defended, being also under cover of the curtain wall.

The curtain wall starts from the east side of the entrance to the keep, and runs straight down the mound to the existing gateway, which is modern, and within the original town wall a little to the west of the North Gate. It is probable that this entrance is placed on the site of the original gateway of the Castle giving access to the town. The wall of the Bailey was originally a prolongation of the town wall, and is from 5 to 6 feet thick and about 14 feet high ; considerable portions of this wall remain enclosing an area of about an acre ; it runs up the mound on the west and joins the wall of the shell keep at the garderobe previously described ; there is a berm 6 feet wide outside this curtain wall, and a sally-port on the western side 6 feet wide.

The moat around the Bailey is strong and deep, and nearly perfect for its entire length. It originally encircled the Motte, as ancient deeds relating to this portion of the

town describe tenements as lying between the Kingsway (now Castle Street) and the Castle Moat. This portion of it however has long been filled up and in places built over.

The moat was supplied with water by an aqueduct from Harpereswell, flowing past the "Brodestone" and through the west gate, which in time of war and necessity ran into the moat, but at other times followed its old course.¹

The Castle fell into decay a little over a century after the masonry walls were completed.

At the inquest held on the death of George de Cantilupe in 1273, the jury returned that

"there is there a certain place which is called the castle of Totton (Totnes) which contains certain houses in poor condition; namely a certain dilapidated hall, and a camera and chapel in ruins, and at the same place are certain walls much broken down and in ruins which belong to the said buildings.

And there is a Motte the walls on which are partly broken down, and there are certain rents called Ysgavel, which are worth 12d. (rents due from certain curtilages at the nativity of S. John the Baptist), and Estergavel (a rent of assize, 2d. paid yearly from every burgess at Easter) 36s. 2d., Frigavel (a rent payable at the festival of St. Martin from every burgess having a wife 2d., if without a wife 1d. without the town nothing) 11s. 2d., Ganigavel or Thangavel (a rent from every tanner 2d. at the festival of St. Martin) 2s. 6d., and Chepgavel (a rent from every merchant of the guild of Merchants of Totnes not having a tenement there 6d. at the four terms of the year) 12s. etc."²

The Knights' fees attached to the Castle of Totnes were held by certain services, one of which was the finding of crossbow men in time of war, and also repairing the battlements of the keep.

Leland, in his *Itinerary*, 1534-43, visited Totnes and describes the town and Castle as follows:—

"The town of Totenes lyith along from the Toppe of an High Rokky Hille by West onto the Roote of it by Est. This Toun hath beene waulid, but the waulles be now clene downe; a Man may see wher the Foundation was of them. Ther be yet 3 Gates by West, Est, and (north). The Castelle of Totnes stondith on the Hille North West of the Towne. The Castelle Waule and the stronge Dungeon be maintained. The Logginges of the Castelle be clene in Ruine. Many Gentilmen hold their Landes by Gard and Service to this Castelle."

¹ Totnes Priory deed, 1459.

² I. P.M., C Ed. 1st, F. 2, No. 7.

Of its military history we know but little, but Lysons states it was occupied by Lord Goring in 1645, and appears to have been in possession of the King's forces in the month of January, following when they gutted it, on the approach of Sir Thomas Fairfax towards Dartmouth.

Since that period the walls, which are thickly covered with destructive ivy, have lingered on in slow decay.

THE TOWN WALLS.

In Devon and Cornwall, the city of Exeter, and the towns of Totnes, Launceston, Barnstaple, and possibly Lydford, were originally walled, and considerable remains of these walls still stand in the three first.

Originally, as in the case of the Castles, earthen mounds, surmounted by a strong palisade, were generally built, and at a later period these gave place to a masonry wall, which varied much in height and thickness. At Exeter the walls were from 20 to 30 feet high, with a thickness of 10 feet at the base, whilst at Southampton they were from 35 to 40 feet high. The usual height of town walls was however much less, varying from 15 to 20 feet, and from 6 to 8 feet in thickness.

There was always a rampart walk on the wall, with a parapet usually battlemented on the outside.

A narrow lane was left inside the wall giving free access to it, and where the wall itself has disappeared its site can frequently be traced (as at Barnstaple) by the road inside its site.

The town of Totnes was probably the smallest walled town in England, measuring about 300 yards long and 200 yards wide, and containing about 10 acres, exclusive of the castle. Although a large length of the wall has been destroyed, its course can be traced without difficulty.

There were four gates in the wall, the North, East, South or Shambles, and West gates, two of which, the North and East, still stand.

Starting from the curtain wall of the Inner Bailey north of the keep the wall ran to the North gate, which is still standing and fairly perfect ; it is a plain lofty semicircular arch through the wall, which here is about 6 to 8 feet in thickness ; the roadway has been lowered, and the wall underpinned since the original gate was built ; this was probably a postern gateway.

Beyond this it has been altogether destroyed, passing through the gardens of houses until the Guildhall is reached. Here in the basement of the adjoining ancient Grammar School the wall forms its north side, with a berm outside from 10 to 12 feet wide.

This basement is lit by a loophole through the wall, and there are also a couple of triangular buttresses on its inner side.

It has been assumed and generally believed that the Guildhall was the frater of the Priory, but this is clearly not the case, as any building in this position would have blocked the inside lane, invariably left for access to the wall around the town, and also the architecture of the building disproves the assumption. Fortunately the matter is set at rest by the exact boundaries of the Priory being set out in letters patent granted by Edward VI, 30th June, 1553 (*Patent Rolls*, No. 861, 7 Ed. 6th, Part II, M5), which recites that

“Smythe gentleman on 13th March 33 Henry VIII (1542) granted to the said king the whole land near the parish church of Tottnes and near the cemetery of the same, where formerly the priory of Tottnes, now destroyed, was situated and built, on account of the necessity for accommodating and making wider the cemetery of the aforesaid parish church, and of newly building and extending the edifice of the parish church.

Which land lies on the north side of the parish church and contains by estimation in width to the west end, namely from the stone wall near and opposite the said parish church on the south side, as far as a certain stone wall or boundary there on the north side 96 feet, and so by the same following the same wall and boundary on the north side just as the same stone wall or boundary on the north side leads from the west as far as the east; and which land contains by estimation in length from the west and as far as the east end 297 feet just as the same land is enclosed and shewn by the stone walls and bounds.

The King to hold with the intent the said land should be used as part of the cemetery of parish church.

And also as The Guildhall is too small, and there are several ancient and ruinous buildings on the said land the King grants the land and ancient houses to the Mayor and Citizens to build a Guildhall, a Prison, and a Grammar school, and the remaining buildings to be converted if necessary.”

The wall described on the north is the priory wall, and by the measurements left a lane about ten feet wide between it and the town wall, as was done in a similar

situation at the priory of St. Augustine's, Canterbury. With the materials of the old buildings on the site and others the Mayor and burgesses built a Guildhall, Grammar School, and Prison, and as the necessity for a defensive wall had passed away, they enclosed the lane and backed the new buildings on to the ruined town wall, diverting the road to the south over the site of the old frater.

Beyond this building the wall is extant to the High Street, the rampant walk still existing and being used as a footpath, the wall being the house line on the east.

The East Gate at High Street was rebuilt in mediæval times and much altered afterwards. It originally had a couple of archways, a large one spanning the roadway for horse traffic and a small one for foot passengers.

Beyond the East Gate the wall passes along the inner side of South Street for about two hundred feet, forming the eastern wall of the clock house, and then continues between South Street and a lane still known as "behind the walls." It is here of considerable height, but it is difficult to say what proportion of the original masonry remains.

Here opposite the market is the site of the South or Shambles Gate.

The West Gate was situated at the junction of South Street and High Street. It was very low and narrow, and was removed early in the 19th century. As far as can be ascertained there are no traces of the wall now existing to the west of this spot, but it undoubtedly joined the curtain wall of the castle Inner Bailey, thus forming a continuous line of defence around the town.

Originally, Totnes was surrounded by a timber palisade like that of the castle, and the masonry walls were probably not built until after the middle of the 13th century, as on April 13th, 1264, Henry III granted to the bailiffs, burgesses, and other good men of Totton (Totnes) a murage for five years from Easter, 1264.

After Exeter, Totnes is the most interesting town in Devon. Its superb position on a bold ridge in the valley of Dart, crowned with its lordly castle, encircled with its strong wall, and possessing its unique guild and municipal documents recording the rise and development of self-government, trade and maritime enterprise, all combine to render it well worthy of the ancient traditions of our fair county of Devon.



DARTMOUTH HAVEN SHORTLY AFTER WENYNGTON'S TIME.

(From a chart in the British Museum.)

ROBERT WENYNGTON.—To face page 199.

ROBERT WENYNGTON:
AN OLD "SEA-DOG" OF DEVON.¹

BY COLONEL E. T. CLIFFORD, V.D.

(*Chairman, London Devonian Association.*)

(Read at Plymouth, 19th July, 1916.)

DEVON has every reason to be proud of the position taken by her sons in every realm of thought and action—Letters, Art, Science, War, and Statesmanship.

Yet it is in the nature of things that there must be many whose lives and actions deserve recognition, but who are crowded out for some reason or another, possibly, as we should like to assure ourselves, owing to the great number of Worthies the County has produced. Such an one was Robert Wenynghon of Dartmouth, and I am satisfied that men of Dartmouth will regard with satisfaction this effort to rehabilitate their great townsman. Though most of the details of his life are lost, yet there are on record certain incidents which justify us in giving him a niche in the Devonian Temple of Fame. His name is not to be found in our monumental Dictionary of National Biography, nor is he well known to ordinary chroniclers. The chief sources of our information about him are the *Paston Letters* and the *Patent Rolls*. In recent times he has been referred to by Sir James Ramsay, who, in his *History of the Fifteenth Century*, calls him simply a "Pirate"; and Mr. Ian Colvin, in his book entitled *Germans in England*, calls him "an illiterate but valiant man of Devon." A reviewer of the latter book refers to the important incident described in Wenynghon's letter as a "fine glorious tale which every English schoolboy should

¹ In submitting this paper I desire to acknowledge my indebtedness to Mr. Michell Whitley. The whole of the research work involved in its preparation was, with much time and labour, extracted by him personally from documents in the British Museum and Public Record Office. My thanks are also due to Mr. R. Pearse Chope for revising the proofs.

know by heart in Bob Wenynghon's own words, but there are none of our school histories that will tell him anything about it."

It is because I heartily agree with the reviewer and because owing to the present awful war the occasion is appropriate, that I now venture to submit this paper to our Association. If in trying to do justice to one who is, I hold, a Devon Worthy—"I stray into history," to use the words of Lord Bryce in his work on American Democracy—I am sure of a hearing from Devonians and am not unhopeful of reaching even a wider audience than the English schoolboy.

In judging of such a man we ought to bear in mind Lord Morley's dictum that the equity of history requires us to judge men of action by the standard of men of action, and I may remark that this axiom is quoted with approval by Lord Acton, who further says that the man is a product of the society by which he stands or falls.

So when I read Sir James Ramsay's brief and contemptuous dismissal of Robert Wenynghon, I felt impelled to verify his statement, and I hope to show you that, when his pronouncement has been weighed in the balance, it will be found wanting.

Robert Wenynghon was a merchant of Dartmouth in the fifteenth century, at a time when it was one of the most important ports in the West of England. In one of the Commissions (28 July, 1450) he is described as of Clyfton Dertemouth Hardenesse, Co. Devon. The dates of his birth and death are unknown, but we have incidents in his life occurring between the years 1439 and 1462. He was evidently a man of good standing and of public importance. He was Mayor of Dartmouth in 1446, Junior Member of Parliament for Dartmouth in February, 1449, and re-elected Senior Member of Parliament in November, 1449. He was appointed on 1st April, 1455, Receiver of Dues, with Robert Gambon, in the ports of Exeter and Dartmouth.¹ He was also Collector of Customs with Thomas Gale for the ports of Dartmouth and Exeter, but the precise year cannot be ascertained, as the Roll is mutilated.² He was nominated on certain Royal Commis-

¹ Watkin, *Totnes Priory and Medieval Town*, p. 430.

² *Custom Rolls*, Hen. VI. No. 40/35-40/36. A Thomas Gale was M.P. for Dartmouth in 1467, 1472, and 1478, and Mayor of Dartmouth in 1479.

sions relating to shipping matters in the West, as will be seen by reference to the Appendix. There were other Wenynngtons, presumably relatives, in the neighbourhood, who were apparently well-to-do merchants.

Wenynngton's name appears variously written—Wynnyngtone, Wyllyngton, Wellyngton, Wemyngton, Wenynngton, and Wenynngtone, but the accepted spelling is as set forth at the head of this paper.

The first notice of him appears in the *Patent Rolls* of 26th February, 1439 (Appx. A), appointing him on a Commission with John Pole to enquire into whose hands had come the tackle and cargo of a carrack of Genoa—"whereof Viscount Spendela was master and part owner"—and to have them restored to the owners, after reasonable payment to the salvors for their labours; and these commissioners were to certify to the King in Chancery the names of any persons refusing to make such restitution. This carrack had been cast away in a storm before the port of Dartmouth. This first notice of him is an interesting one, for it brings him before us in an important official position. Unfortunately no return to this enquiry is known to exist, at least in the Public Record Office; if there is any such return, it is uncatalogued and not available.

On the 12th November, 1445, he appears in a different light, for a Commission (Appx. B) was issued to the Earl of Devon and others to make inquisition touching the information that Robert Wyllyngton of Dartmouth and others took a ship sent by the King's Aunt of France laden with wine, &c., under Letters of Safe Conduct and the Truce between the King and his Uncle of France, and brought it into Fowey with the merchants and merchandise therein, disposed of the latter at will and beat and wounded the former, slaying some of them. Whether Robert Wenynngton was innocent or guilty of the charge we have no means of ascertaining, as there is nothing further on the subject in the *Patent Rolls*, but it may be fairly assumed from what followed that Wenynngton was able to clear himself from the charge.

On the 4th April, 1449 (Appx. C) a formal Commission to serve the King on the sea, a Commission which gave Wenynngton tremendous powers, was issued to him "by advice of the Council," and at the same time to Gervase Clyfton, Sheriff of Kent in 1451, and to Alexander Edon,

who was also Sheriff of Kent in 1450. Obviously at that time Wenynghon must have been a very important man to have been associated in the "cleansing of the seas" with men who just afterwards became Sheriffs of Kent. It will be observed that this was the year in which he was Member of Parliament for Dartmouth. At the same time the King wrote to the Earl of Devonshire and others (Appx. D) saying that "his well-beloved squyer Robert Wynnyngtone was bound by endenture to do the King's service in the see," and praying them to assist him as much as possible.

Wenynghon lost no time in proceeding to business, for on the 25th May, 1449, he wrote his famous letter to Thomas Daniel, "Squier for the Kyngs Body," reciting an engagement he with a small force had with a hundred great ships of Prussia, Lubeck, and other towns.

The original of Wenynghon's letter is in the French Archives. It is the only interesting utterance we have from him, and it runs as follows :—

To my Reverend Mayster, Thomas Danyell, Squier for the Kyngs Body, be thys letter delyverd in haste.

Most reverend mayster, I recomaund me on to yowr graceus maystreschup, ever deseryng to her of yowr wurschupfull ustate, the whyche All myghte God mayntayne hyt, and encrese hyt on to hys plesans : Plesying yow to know of my wellfare, and of all yowr men, at the making of thys letter, we wer in gode hele of body i blessyd be God.

Mo over, mayster, I send yow word, by Rauly Pykeryng, of all maters, the whyche I be seche yow yeve hym credens, as he wylle enforme yow of all ; so, sur, I beseche yow, in the reverens of God, that ye wyl enforme ovr Soverayn Lord the Kyng of all maters that I send yow in thys letter, lyke as I have send a letter to my Lord Chaunseler and to all my Lordys by the sayd Pykeryng ; the whyche letter I beseche yow that ye take and delyver to my Lord and all my Lordys by yowr awne handys, and lete the sayd Pykeryng declare all thyngs as he hath sayn and knoweth.

Furst, I send yow worde, that when we went to see, we toke ij. schyppys of Brast comyng owte of Flaundrys ; and then after, ther ys made a grete armyng in Brytayne to mete with me and my felyschyp, that ys to say, the grete schyp of Brast, the grete schyp of the Morleys, the grete schyp of Vanng with other viij. schyppis, bargys, and balyngers, to the number of iij. m^{li}. [3000] men ; and so we lay in the see to mete with them.

And then we mette with a flotte of a c. [hundred] grete schyppys of Pruse, Lubycke, Campe, Rastocke, Holond, Selond and Flandres betwyte Garnyse [Guernsey] and Portland; and then I cam aboard the Admirall, and bade them stryke in the Kyngys name of Englund, and they bade me skyte in the Kyngs name of Englund; and then I and my feleschyp sayd, but [unless] he wyll streke don the sayle, that I wyld over sayle ham by the grace of God, and God wyll send me wynd and wether; and dey bade me do my wurst, by cause I had so fewe schyppys and so smale, that they scornyd with me. And as God wuld, on Fryday last was, we had a gode wynd, and then we armyd to the number of ij. m.^l [2000] men in my felyschyp, and made us redy for to over sayle them; and then they lonchyd a bote, and sette up a stondert of truesse [truce] and com and spake with me. And ther they were yolded all the hundret schyppys to go with me in what port that me lust and my felawys; but they faothe with me the day before, and schotte atte us a j.m.^l [1000] gonnys, and quarell [properly quarreaux, square pyramids of iron shot out of crossbows] owte of number, and have slayn meny of my felyschyp, and meymyd all soo. Wherfor me thyngkyt that they haye forfeit bothe schypps and godys at our Soverayn Lord the Kyngys wyll. Besechyng yow that ye do yowr parte in thys mater, for thys I have wrytyn to my Lord Chaunseler¹ and all my Lordys of the Kyngys Counsell; and so I have brofte them, all the c. [hundred] shyppys, within Wyght, in spyte of them all.

And ye myght gete leve of owr Soverayn Lord the Kyng to com hydder, hyt schall turne yow to grete wurschup and profett, to helpe make owr a poyntement in the Kyngs name, for ye sawe never suche a syght of schyppys take in to Englund thys c. wynter; for we ly armyd nyght and day to kepe them, in to the tyme we have tydengs of our Soverayn and hys counsell. For truly they have do harme to me, and to my feleschyp, and to yowr schyppys more [than] ij. m.^l ^{li}. [Fenn says the reading of the original is indistinct, and he could not determine whether £2000 or £3000 was meant] worth harme; and therfor I am aveyd, and all my feleschyp, to droune them and slee them, withoute that we hafe tydengs from owr Soverayn the Kyng and hys counsell. And therfor, in the reverens of God, come ye yowr self, and ye schall have a grete avayle and wurschup of yowr comyng to see a suche syght, for I der well sey that I have her at this tyme all the cheff schyppys of Duchelond, Holond, Selond, and Flaundrys, and now hyt wer tyme for to trete for a fynell pese as for that partyes.

I writ no more to yow at thys tyme, but All myghty Jesus

¹ John Stafford, Archbishop of Canterbury.

have yow in hys keepyng. I writ in hast, within Wyght, on Soneday at nyght after the Ascencion of owr Lord. [25th May, 1449.]

By yowr owne Servant,

ROBT. WENYNGTON.¹

Wenyngton's fight is peculiarly interesting just now : and as there are so many points of similarity between the causes that led to that fight and the causes which led to the present deplorable war, it might be well to set forth briefly the state of affairs that brought about the grant of such a letter as the King wrote.

For several generations, principally during the period of our attempted expansion in France, foreign influence had, by means of "peaceful penetration," so dominated the trade of this country that the nation at last rose against it, and so successfully that by Elizabeth's time there was not, it is said, a single German trading concern in England. Owing to the extraordinary trade grip, primarily of the Hanseatic League, largely secured by means of heavy subsidies paid to those who could and did help them, passively if not actively, from the highest in the land, for there is no doubt that the Hanse rendered considerable financial assistance to our monarchs, England's foreign trade was severely hampered ; and the difficulty of carrying on and extending it was so acute that Guilds, known as "The Merchant Adventurers," were formed in many towns—some twelve in all—London being the chief, and Exeter another. Their object was to organize foreign markets for English cloth, and to rid themselves of foreign control as to where they should sell it and what they should sell it for. Their success and gradual extension was feared and resented by the Hanse Towns, some of which were the so-called "Free Towns," which were claimed by the State Documents of the day and by German historians to be German or under Germanic influence. Every effort was made by the Hanseatic League to arrest the development of the Merchant Adventurers, one of which was by employing pirates—who were of course disavowed when necessary—to harry our trade and take our seamen prisoners, whom they treated somewhat in the fashion that Germany treats her prisoners to-day. Retaliation followed, and trade was raided by either side indiscriminately, until

¹ *Paston Letters*, by James Gairdner, 1900, Vol. I, pp. 84-6, No. 68.

at last the King was compelled by public opinion to take action. Clowes, in his *History of the Royal Navy*,¹ states that Henry VI, under an Order in Council, had directed the sale of the greater part of the Fleet, apparently to pay his debts,² and that the policeing of the "narrow seas" had to be carried out by "Contractors." It is possible that Wenynghton may have been a Contractor in the past, but he certainly was not henceforth, if we have regard to the terms of his Commission from the King, and the letter the King wrote to the Earl of Devonshire and other local notables, praying them to show all the favour and help they could to "oure trusty and welbeloved squyer Robert Wynnyngtone, who is withholde towards us by endenture made in this behalfe, to do us service in the see, for the clensing of the same and rebukying of the robbeurs and pirates thereof, which dayly do alle the noysance they canne, whos resistence and putting aside is, and shalbe, bothe to oure worshipec, renome and fame, and to the good publike of us, this oure lande and subgittes."

It is a fact that Wenynghton was acting with most comprehensive powers under the King's authority. In the Guernsey fight some of the King's ships were under his command. Our only knowledge of how he executed his commission is contained in the letter which he wrote to "My Reverend Mayster, Thomas Danyell, Squier for the Kyngs Body." By "Reverend" he, of course, means "respected." Briefly, it will be observed the letter proudly states that, with a few small ships (for the foreigner did not allow us to build large ones), on May 25th, 1449, somewhere off Guernsey, Wenynghton met a Fleet of 100 great ships of Prussia, Lubeck, and other towns; bearing down upon them with his cannon charged and with his linstocks lighted, he bade them strike their flag in the name of the King of England. But, apparently because his ships were few and small, they shot at him, doing great damage, and slew some of his men, and (worse than all) they scorned him, and bade him do his worst.

¹ Vol. I, p. 348.

² It must be remembered that the middle of the fifteenth century witnessed a sad collapse of the Imperial aspirations of Henry V. The fleet which he had striven, and not without success, to raise, had now disappeared altogether. His son, Henry VI, lacked the first elements of kingship, and fell under the influence of a series of bad advisers, notably his wife and Suffolk. The Crown was therefore reduced to seek the support of the Captains of the Merchant Navy, who frequently acted in the capacity of "Contractors."

Wenyngton's answer was to over-sail them and beat them ship by ship, ultimately capturing the whole Fleet and bringing it into the Solent.

Wenyngton states that upwards of £3000 damage, representing to-day some £40,000, was done to the King's ships alone, and many lives were lost, so there was obviously a good fight. Apparently through treachery so many English lives were lost and so much damage was done that Wenyngton wished to "slee" the lot, but hesitated to do so without authority from the King. He states in his letter that the enemy had played him false, so no doubt his Devon blood was up, but this must be said, that he fought a good fight, he showed himself a brave man and a great sailor, and, reading the whole tale as it stands, it is one that should make every Devonian, aye ! every Briton, proud of Wenyngton and regard him as one of those old "Sea Dogs" of the West who contributed so much to establish the Sea Power of England.

The propriety of Wenyngton's action has been questioned, in that the enemy ships or some of them belonged to the Hanseatic League, with whom we were nominally at peace ; Wenyngton, however, in his letter says that "now it were time for to treat for a final peace as for that parties," suggesting a state of war ; but there can be no doubt that the past action of the League, directly or through its servants, coupled with present treachery, excused, if it did not actually justify, Wenyngton in taking extreme measures. They were turbulent times, and men were not always governed by the "letter of the Law," but by their own views of "right and wrong." In this case the inference is that Wenyngton, as Commander, or probably Admiral, of the King's Fleet, demanded inspection which was presumably granted and abused, with the result that Wenyngton took action.

A somewhat similar incident occurred about the same time ; it is quoted by Clowes in his *History of the Royal Navy*,¹ and, as it bears upon this question, its relation is appropriate. It appears that certain merchants at Dartmouth had ships impressed at Bordeaux by the Duke of Clarence in order to bring troops to England ; off Belle Isle they fell in with two Prussian hulks laden with wine from La Rochelle. Being anxious to discover whether the hulks and their cargoes belonged to the enemy, Sir John

Colville, who was in command, sent a boat to examine their Bills of Lading and to inform the Masters that, if they had enemy's property on board, they must deliver it to him, and he would pay for the freight of it. The Prussians refused an answer, and next day attacked the English who were still on board the hulks, and killed many of them. Colville thereupon captured the hulks and carried them into Southampton and Poole. An Enquiry was ordered, but we cannot find that any result was recorded.

Under International Law as now accepted, ships would be forfeited in a like case in war-time, for they violently repelled the searchers who were acting under a duly commissioned authority. As it is probable that a similar state of affairs existed in Wenynghon's case, it may be reasonably concluded that his action was justified.

It is of considerable interest to note that there is now organized in Germany a "Hansa League" of Merchants, Manufacturers, Financiers, Shippers, and Exporters. This is a notable revival of the past. It is stated that all the great captains of German industry are "Hansa Leaguers"; inasmuch as the Promoter of the League is a prominent Politician and an avowed apostle of a "forward" Foreign Trade policy for Germans after the war, it is evident that a great push on the old Hansa lines will be made, which, with our past and present experience, we shall be able to meet and deal with.

Ramsay, in the index to his *Century of English History*¹ (1399-1485), is responsible for this entry: "Winnington, Robert, a Devon pirate." Another direct statement Ramsay makes about Winnington in his History is as follows: "The only traceable war expenditure of the Spring was for naval operations, and they took a curious turn. In April Robert Winnington, a Devon man, was commissioned to 'cleanse the sea of pirates.'"²

Chambers's *Dictionary* defines "Pirate" as "one who without authority attempts to capture ships at sea: a sea robber: an armed vessel which, without legal right, plunders other vessels at sea."

The word is a very old one, and the foregoing was the definition of it in the fifteenth century as it is to-day.

Here is a man whom Ramsay knew to be Commissioned (i.e. acting under authority), described by him as a Pirate; a man (for of course he is our friend Robert Wenynghon of

¹ Vol. II, p. 628.

² Vol. II, p. 102.

Dartmouth) we know from the Records to have been Member of Parliament for his native town, Mayor of his native town, appointed by the King on various and important commissions, His Majesty's Collector of Customs, and finally, in the King's own words, "oure trusty and welbeloved squyer," "our well-beloved Robert Wenynghon of Dertmouth."

As it is obviously impossible to reconcile Ramsay's own statements, how are we to account for the misrepresentation? From what has been further dug out from the Records one is inclined to think that the influence of prejudice has something to do with it, coupled with a disinclination, at any rate in this case, to probe matters to the "rock bottom." This may be gathered by the following, which is taken from Ramsay's History¹: "In 1450 the Earl of Suffolk sailed for Calais, but was intercepted off the Kentish coast by the 'Nicholas of the Tower' and other vessels—King's ships—that were lying in wait for him. He was captured and taken on board the 'Nicholas.' On the 2nd May his head was struck off on the gunwale of a boat; his body was taken to land and thrown on the sands at Dover. The guilty parties have never been traced, nor apparently was any attempt made to trace them. . . . William of Worcester, in his account of Suffolk's death, mentions one 'Robertus,' but the sentence is defective, and the family name of the man is wanting. Now the Christian name of Winnington, the Devonshire pirate, was Robert, and he was a very likely man to have been retained for such work."

It cannot be held that there is even a suggestion of evidence to warrant so grave a charge as Ramsay makes, which appears to be founded on prejudice and built upon conjecture. If the history of the period were considered, one would, I think, be justified in coming to an entirely different conclusion. Suffolk, no doubt, deserved his fate. Though he was the man who was primarily responsible for England's parlous condition and the loss of her possessions in France, yet he had been and was the favourite of the King. Henry VI believed in him and in his support, and had only banished him to save his life, hoping to bring him back when present troubles had blown over. Wenynghon owed much to the King. Is it likely he would have taken a King's ship and hung about the coast of Suffolk in order to trap the boat on which the Duke was escaping,

¹ Vol. II, p. 121.

with the object of destroying the favourite of his King ? Our knowledge of Wenynghton's life may not be extensive, but the known incidents in his career would indicate that he was not, as Ramsay puts it, "a very likely man to have been retained for such work."

Surely it would have been better and fairer to stick to facts, leaving them to speak for themselves, for whether it be history or anything else, it is, after all, only the facts that matter. If justification for this statement were necessary, I would submit what Lord Acton says in one of his "Essays on Liberty" :

"Such things will cease to be written when men perceive that truth is the only merit that gives dignity and worth to History."

In the *Chronicles of Fabyan* (p. 622) the following is given as the account of Suffolk's death : The "Nicholas of the Tower" took Suffolk's ship and went to Dover : when he was entering into the Roade "he caused hym to be confessyd of his owne chapelayne, and that done, shypmen put hym in a shyp boote, and there, upon the syde of the bote, one strake off his hede, whiche hede with the body was soon after conveyed to the lande of Dover, and there left upon the sandes, and the sayde shypmen retourned unto the see agayne." It will be observed that Fabyan makes no reference to Wenynghton. His statement is that "one of the shypmen strake off his hede." This is similar to the statement of William of Worcester, who states that Suffolk was beheaded by the sailors.

But there *was* another "Robert" who took a considerable part in the Naval Warfare or Raidings of the day, which were of constant occurrence ; indeed, judging from the Records, it was at this period perpetual sea war and raiding all round. About this other "Robert," Ramsay has the following : "In May, 1451, Henry (the King) paid £4666 to the Duke of Burgundy for damage done to the Dutch and Flemish shipping by English subjects, but the name of the chief offender is given as Robert Cane."

On page 621 in the *Chronicles of Fabyan* (see Appx. E) is an account of the King calling a Parliament to consider complaints made by our Merchants on account of their vessels being arrested in Bruges, Ypres, and other places as a set-off against a whole Fleet of theirs being taken by Robert of Cane.

In the *Issue Rolls* of the Exchequer—May, 1451—it appears that an Order was made by which the King ordered that a payment should be made to Adrian Sqyville, the Deputy of the Duke of Burgundy, for restitution and replacement of stores and damages caused by Robert Caen and his adherents to the friends of the King subjects of Flanders, Holland, and Zealand in taking divers of their ships and goods, and accordingly a payment was made to Adrian on their behalf of £2566 13s. 4d.

The next entry in the *Issue Rolls* refers to a similar case. By this a further payment was made “to the Mayor and Society of Merchants of Cales (Calais) as compensation for a certain ship called a ‘Kerveyle,’ and the goods on board, and for a ship called a ‘Hulke’ taken at the battle of Saluse, belonging to the owyenes of Bruges, and for a ship and goods belonging to the Mayor of Rolygus captured, and a further payment was made of £2000.”

It will be seen that there is no mention of Wenynghon’s name in these documents, nor is there any statement to connect him with the depredations on shipping, for which £4666 was paid by the King—on the contrary, it is distinctly stated that the principal offender was Robert Cane, and it is clear that Wenynghon, who was a well-known man, would, if responsible, have had his name inserted.

Who then was this Robert Cane or Robert of Cane? The *Patent Rolls* for 1450, 26th April, supply the information: “Revocation of the protection with clause *volumus* for half a year granted on 17 April last to Richard Thorpe *alias* Thorp of London, ‘gentilman,’ as staying in the company of Robert Veer, Knight, on the safe-keeping and defence of the castle and town of Caen, in Normandy; because he tarries at Northampton, as the sheriff of the county has certified.”

Sir Robert Veer, Knt., was Governor of Caen in Normandy,¹ and would be described as Robert of Cane, just as Wenynghon was described as Robert of Dartmouth. There is not a tittle of evidence that Wenynghon was Governor of Caen; he was a merchant of Dartmouth, and about that time M.P. for the Borough, and occupied in England with his business and public duties.

But even if Ramsay believed that Robert Wenynghon

¹ He was Captain of Caen, 1450, Contractor with others to “keep the sea” in 1454, M.P. for Devon in 1455. Alexander, *Trans. Devon. Assoc.*, XLVI, 492.

was Robert Cane, the Governor of Caen in Normandy, there was not the slightest justification for calling him a Pirate, considering he acted under authority in fighting and capturing what he called the Prussian Fleet (and we know of no other sea incident connected with his name), reporting his action at once to the King who had commissioned him; nor indeed would it affect the glory of that Guernsey battle, which must have been carried out with consummate seamanship and bravery.

On the 28th July, 1450 (Appx. F), a Commission was issued to John Fortescue, Knight, and others, appointing them to make inquisition touching the names of malefactors who, with Robert Wenynghton, assaulted and imprisoned Walter Reynell, so that his life was despaired of, and kept him in prison until he delivered to Wenynghton a writing whereby he released to him all personal actions and John Purchas, prisoner of John Lake; and on the same date a Commission (Appx. F) was issued to several persons, amongst whom was the imprisoned Walter Reynell, to arrest (not to imprison) Wenynghton, and to bring him before the King in Council. It will be observed that Wenynghton is not indicated as a malefactor.

The whole incident appears to be a squabble. That Reynell allowed himself to be appointed one of the parties to arrest is curious and makes one suspicious of him; under the circumstances, any fair-minded man would have declined to accept such a position. However, there is no record of an answer to the charge, which does not appear, from subsequent appointments, to have affected Wenynghton's public position.

The following is related by Ramsay in his *Century of English History*, under date 1452, 7th April: "A general pardon for all offences. Two to three thousand persons, with the Duke of York at their head, came in to claim the indulgence and had patents made out to them."

Ramsay further quotes "Whethamsted" as follows: "Among the names on the *Pardon Roll* Mr. Gairdner cites the Duke of Norfolk, the Earl of Devon, and Robert Wennington," so whatever he had done which rendered it desirable that he should ask for pardon, which he received, there is this to be said, that he was in very good company.

On the 23rd December, 1455, Wenynghton was one of an influential Commission appointed to make inquisition in respect of a petition of the Bishop of St. Andrews,

Scotland, who owned a ship called "le Marie of Saynt Andrewes," which was sailing towards Scotland under the King's safe-conduct, when certain subjects of the King took the ship (which was laden with 125 tuns of wine and other goods and merchandise) and distributed the ship, wine, and goods within Devon. The Commissioners were to arrest and commit the guilty to prison, and to compel restitution of the ship and goods or to send the possessors to prison. On 6th March, 1456, another Commission was issued to Wenynghon and others. The King had learned that the ship had been arrested by the Commissioners in the Port of Dartmouth, and commanded them to deliver it to the Bishop's proctors, and to certify to the King in Chancery. On the 4th April, 1456, a further Commission was issued to Wenynghon and others. It would appear that after all the ship had not been arrested, because a certain Philip Alare had got hold of it and had changed its name to "le Anthony of Dertemouth," and, to impede the execution of the Commission, used other letters of licence to take the ship with 30 pilgrims to Santiago in Galicia. Under this Commission the Commissioners were commanded to make restitution of the ship, with the tackling thereof, to the Bishop's proctors. It is not to be supposed that the Commissioners would be personally responsible, and, as the ship had gone, they could only adopt the policy of "wait and see," when, no doubt, further Commissions would be issued. At least four Commissions had been appointed in connection with this business before Wenynghon came on the scene, and there were subsequent proceedings in Chancery, and the matter may still be there for all we know, as no final record of the proceedings can be traced. In one of the Commissions it is stated that William Kydde and other pirates had captured the ship "le Marie." As it was a Scotch vessel, it is not unfair to suggest that this Kydde was an ancestor of our old friend Captain Kidd of Greenock, who was hanged for piracy, &c., in 1701. The "le Marie" incident is only interesting to us because Wenynghon acted as a Commissioner, and that he was probably appointed, when other Commissioners had failed, on account of his position and knowledge of shipping and such matters.

On the 10th February, 1462 (Appx. G), the King ordered a grant of £10 yearly for life to Robert Wenynghon, whom he calls "our well-beloved Robert Wenynghon of our

Dertmouth." £10 represents approximately £160 of our present-day currency. It was to be levied from the Customs and Subsidies in the Ports of Exeter and Dartmouth. The original grant, which is in Latin, is at the Public Record Office. It has already been stated that Robert Wenynghton and Thomas Gale were Collectors of the Customs for the Ports of Dartmouth and Exeter, so this grant may have been a retiring pension. On the other hand, it may have been and probably was given in recognition of his public services ; there is little doubt that Wenynghton must have sacrificed much in the King's service ; at any rate the King refers to "the good and unpaid service which he has on many occasions heretofore rendered to us, to our great satisfaction, and will hereafter render." We have been able to survey incidents in the life of Wenynghton for over twenty years, and it may not unfairly be assumed that at the date of the grant he was between 50 and 60 years of age.

Wenynghton, then, it may confidently be asserted, instead of being what we ordinarily mean by a pirate, was exactly the opposite. Responsible public positions he occupied, commissions he bore—royal commissions—at various times during the period of twenty years under two monarchs and many statesmen. It may be that sometimes through an excess of zeal he exceeded his orders, but the fact that on each occasion he shortly afterwards found his offence condoned and substantially recognised by way of a fresh Commission from the Crown, substantiates his claim to our respect, if not our admiration.

To call him a pirate in the ordinary sense is quite as absurd as to call Drake a pirate ; each of them was officially trusted with money, and obviously, so far from diverting that money to his own use, each of them formed an official channel for the Royal treasure to reach the King, and in this connection the fact I have just mentioned, that Edward IV gave him a grant, is peculiarly significant, because Edward IV, beyond all other monarchs, had the loyal support of wealthy London, that is to say, he was trusted by the capitalists. If, then, we seek to apply the axiom that men of action must be judged by the standard of men of action, we may claim on behalf of Wenynghton that not only has he been judged by the standard of men of action, but by men of action themselves, for the latest contemporary tribute to his character and conduct consists in this signal method of recognising his merits.

APPENDIX A.

Calendar of Patent Rolls, 17 Henry VI.
1439, 26th February.

Commission to John Pole and Robert Wenynghon, reciting that on behalf of the merchants of Genoa dwelling in London the king has heard that a carrack of Genoa, whereof Viscount Spendela was master and part owner, was lately cast away in a storm before the port of Dartmouth, and certain persons escaped out of her to land alive, so that there cannot be said to be any wreck in this case, and that great part of her tackle and some of her cargo were salved by unknown persons there dwelling, and appointing them to enquire into whose hands the said tackle and cargo came and to have them restored to the owners, after reasonable payment to the salvors for their labours pursuant to the statute, certifying the king in Chancery of the names of any persons refusing to make such restoration and of all that they do herein.

APPENDIX B.

Calendar of Patent Rolls, 24 Henry VI.
1445, 12th November.

Commission to Thomas, earl of Devon, Edward Hull, knight, Henry Hull, Baldwin Folford, Thomas Giffard, Robert Wilford, John More, Nicholas Stybbyng and the sheriffs of Devon and Cornwall to make inquisition in the said counties touching the information that one Langager, John Raune of Kyngesware, Robert Wyllyngton of Dertemouth, Richard Smyth of Kyngesware, John Moryn and Clays Stephen with others unknown took a ship [sent by] the king's aunt of France to England [laden] with wine, iron and other merchandise, under confidence of letters of safe conduct and the truce between the king and his uncle of France, and brought it to Fowy with the merchants and merchandise therein, disposed of the latter at will and beat and wounded the former, slaying some of them.

APPENDIX C.

Calendar of Patent Rolls, 27 Henry VI.
1449, 4th April.

Commission to Gervase Clyfton, esquire, retained by certain indentures to serve the king on the sea, appointing him, by advice of the council, to take, himself or by deputies, ships and other vessels sufficiently arrayed and equipped or ready to be equipped and masters and mariners therefor and men at arms, archers and other persons, and to purvey victuals necessary

in this behalf in all privileged places and elsewhere and all stuff of war, and to set them on board the ships and vessels.

The like to the following :—

Alexander Edon, esquire.

Robert Wymyngton, esquire.

APPENDIX D.

Stevenson's Letters and Papers illustrative of the Wars of the English in France during the reign of Henry VI (Vol. I, p. 489).
27 Henry VI.

1449, 3rd April.

By the King.

Trusty and welbeloved. For asmoche as oure trusty and welbeloved squyer Robert Wynnyngtone of oure counte of Devonshire, is withholde towardes us by endenture made in this behalfe, to do us service in the see, for the clensing of the same and rebukying of the robbeurs and pirates thereof, which dayly do alle the noysance thay canne, whos resistence and putting aside is, and shalbe, bothe to oure worshipe, renome and fame, and to the good publique of us, this oure lande and subgittes ; we pray you therfore, as hertily as we can, that unto the saide Robert ye wol, in that may touche the good spede and furthrance of this his saide journey, shewe unto him alle the faveure and helpe to you possible, tendryng this oure writyng as oure singuler trust is on you. Wherein ye shall doo us ful grete plesire.

Even, etc. at Westminstre, the iij. day of Aprille.

To therle of Devonshire.

To the lorde Fitzwarren.

The lorde Boneville.

To sir Philipe Courteney.

To sir Johne of Dynham.

To the bisshope of Excestre.

To Johne Copstone, squyer.

Item, vj. lettres in like fourme, with blank taylles.

APPENDIX E.

Chronicles of Fabyan (p. 621).

In this xxviiij yere the kyng, callyng a parlyament at Westmynster, the whiche was enjourned to the Blacke Friars at London, and after Cristemas to London agayne. In whiche passetyme, a shypman of the West Countre, named *Robert of Cane*, with a fewe shyppes of warre, toke an hole flete of marchauntes commynge from the Baye, beyng ladyng with salt ; the which were of Pruce, Holande, and Seland, and of other partis of Flaunders and so brought them to Hampton, and there

made his porte sale. For the whyche pryce, the marchauntes goodes of Englande were arestyd in dyvers places of Flaundres, as Bruges, Ipre, and other good townes, and myght nat have ye sayd goodes delyvered tyll they had taken appoyntment for to paye for the sayd pryce and theyr hurtes and damages.

APPENDIX F.

Calendar of Patent Rolls, 28 Henry VI.

1450, 28th July.

Commission of oyer and terminer to John Fortescu, knight, Nicholas Ayssheton, Walter Moyle, Robert Burton, John Gyffard and Thomas Wyse, appointing them to make inquisition in the county of Devon touching the names of the malefactors who with Robert Wenynghon of Clyfton Dertemouth Hardenesse, co. Devon, 'marchaunt,' assaulted and imprisoned Walter Reynell at Clyfton Dertemouth Hardenesse, so that his life was despaired of, and kept him in prison until he delivered to Robert a writing whereby he released to Robert all personal actions and John Purchas, prisoner of John Lake.

For $\frac{1}{2}$ mark paid in the hanaper.

28 Henry VI.

1450, 28th July.

Commission to Robert Burton, Thomas Wyse, Walter Reynell, Henry Drew, John Usflete, Thomas Walrond and the sheriff of Devon, appointing them to arrest Robert Wenynghon of Clyfton Dertemouth Hardenes, co. Devon, 'marchaunt,' and bring him before the king and council.

APPENDIX G.

Patent Rolls, 1 Edward IV, Part III, mem. 22, and Part V, mem. 23.

1462, 10th February.

For Robert Wenynghon. The King to all to whom [these present letters shall come] greeting. Know ye that we of our especial grace and for the good and unpaid service which our well-beloved Robert Wenynghon of Dertmouth has on many occasions heretofore rendered to us, to our great satisfaction, and will hereafter render, have granted him ten pounds to be received yearly from the Feast of St. Michael last past for the term of his life out of the customs and subsidies arising in the ports of Exeter and Dertmouth by the hands of the customers or collectors of the same customs and subsidies for the time being at the Feasts of Exeter and St. Michael in equal portions. In witness whereof, etc. Witness the King at Westminster on the 10th day of February.

By writ of privy seal and of the date, etc.

THE DUNSTONES OF PLYMOUTH AND THE COMPTON-EFFORD GRIT.

A GEOLOGICAL RESURVEY.

BY R. HANSFORD WORTH, M.INST.C.E., F.G.S.

(Read at Plymouth, 19th July, 1916.)

THERE are still many undetermined problems in connection with the geology of Plymouth. In most of these interpretation has outrun observation and no solution can be reached without the collection of additional evidence.

It accords with the irony of circumstance that an effort toward a settlement of existing doubt has led to the disturbance of one of the few decisions which has obtained general assent. Having taken in hand the petrology of the slates of South Devon, the writer was led to an enquiry into the contact rocks adjacent to undoubted intrusive igneous dykes, thence to the contact phenomena at the junctions of the slates and the dunstones, and so to the dunstones themselves.

It has been an article of faith that the dunstones of Plymouth are associated with tuffs and that the dunstones are in the main, in fact almost entirely, contemporaneous rocks interbedded with the adjacent slates. The purpose of this paper is a personal recantation of any previously expressed assent to these views, and the presentment of reasons which appear to give good ground for their refusal.

The greater part of the work involved has been done during the last twelve months, but specimens have been collected for many years past, from transient exposures, such as sewer trenches, which are open but a short time and then refilled.

The area covered is that shown on the following quarter sheets of the six-inch Ordnance Survey—Devon CXVII.

S.W. and S.E., CXVIII. S.W., CXXIII. N.W., N.E., and S.E., and CXXIV. N.W. That portion of the Cornish shore which is to be found on sheets CXVII. S.W., and CXXIII. N.W. has been in part included. East and west the extent lies from Plympton to Defiance Halt, and north and south from Tamerton Foliot to Drake's Island.

Within this space specimens have been taken from over eighty points, while two hundred and sixty new micro-sections have been prepared and examined. It is unfortunate that this still leaves slight deficiencies in the evidence. The writer sought permission to visit localities of such widely varying military importance as the Devonport Brick Fields and Drake's Island, and the Fortress Commander met him with an unqualified refusal. It is true that civilian concert parties frequent the Island and are welcomed, but this preferential treatment accords with historic precedent. There is no recorded instance of any geologist, as such, obtaining admission to a hostile camp, while, on the other hand, from the days of Alfred and of Harold the military mind has been notably lenient toward wandering minstrels.

DUNSTONE is the name locally given to a series of igneous rocks, the members of which, while varying in minuter detail, are all recognised by the practical workman as belonging to one family. The term is probably derived from the prevalent colour of exposed surfaces and of joint faces, in some instances of the body of the rock itself. The fact that this colour is frequently merely superficial, fresh fractures being blue, green, or grey, is recognised by the use of the words "blue dun," to describe the harder and fresher species.

On the principle that a sufficient and correctly applied popular name takes precedence and should not be displaced by an unnecessary imported terminology, the word "dunstone" is here used in preference to *schalstein*, *spilite*, and such-like.

The dunstones have frequently been described, last and in most detail in the Geological Survey Memoir in explanation of the geology of the country around Plymouth and Liskeard (Sheet 348).

In their typical development they are vesicular rocks (the vesicles more usually infilled by secondary minerals). Very rarely, compact, non-vesicular material is found in small quantity. The vesicles vary greatly both in size

and number even in closely adjacent portions of the same exposure. This is most marked where "pillow structure" exists, the cross-section of a pillow frequently presenting concentric rings of more or less vesicular rock, parallel to the outer boundary of the mass; this appearance, however, is sometimes deceptive, since microscopic examination may show the apparently massive alternations to be really very finely vesicular, close set with amygdaloids, the colour of which does not contrast with the mass.

The typical ground mass of the dunstones consists of felspar laths either felted or showing distinct flow structure, these are set in an interstitial material which now consists almost wholly of alteration products, and the original nature of which cannot be determined.

While felted structure characterises some specimens, and flow structure obtains in others, it is frequently the case that slides from one and the same rock will show either, according as they are cut parallel to the cleavage of the rock, or perpendicular to that cleavage respectively.

In most dunstones porphyritic felspars occur in addition to the small laths.

Almost all dunstones contain much leucoxene as an alteration product of titanite iron ores, ilmenite and magnetite.

In the following details two conventions will be adopted: the word "*dyke*," except where the context clearly indicates otherwise, will be used for both dykes and sills; and the word "*carbonate*" will be used wherever any doubt exists as to the precise mineral present, whether calcite or dolomite or some isomorphous mixture of these and possibly siderite also.

PETROLOGY OF THE DUNSTONES.

These rocks have been classed as andesitic basalts, a term which as nearly as may be best describes them.

The felspar laths of the ground mass vary much in size and proportion at different exposures, at one extreme they may be hair-like (CXVII. S.E. 17a, south shore of Weston Mill Creek, lon. $4^{\circ} 0' 14''$, lat. $50^{\circ} 24' 3''$), at the other, the laths may be only from four to five times their breadth in length (CXXIV. N.W. 2, Compton Valley, lon. $4^{\circ} 6' 46''$, lat. $50^{\circ} 23' 43''$, not *in situ*).

There is also a wide variety in their crystal outline; some are perfectly sharp, well formed and defined, others

have ragged ends and these are the more usual, while others have no clean-cut boundary either at their ends or along their sides. It is not uncommon to find sections in which many of the felspar laths are considerably bent, more usually without being cracked. In all these instances the evidence is clear that the bending took place as an incident of the original flow, it may be that a steam vesicle has produced the necessary local pressure, or that an irregularity in the junction surface between dunstone and slate has to be conformed to, a larger felspar may cause the curvature, or such may arise as part of the tortuous streaming of the molten mass, for instance, in the outer skin of a "pillow" (CXXIII. N.E. 17 a x, Head of Lovell Road, Thornhill, lon. $4^{\circ} 7' 50''$, lat. $50^{\circ} 23' 27\frac{1}{2}''$, *in situ*, see Fig. 1).

The general arrangement of the felspar laths may be "indiscriminate," with the longer axes pointing in all directions, or more or less "parallel," indicating flow structure. Parallel arrangements may sometimes be local, they attain great perfection at some junctions of dunstone and slate, especially where the junction is a fairly uniform plane. As instances may be given CXVII. S.E. 13 a, Quarry near Coombe, King's Tamerton, lon. $4^{\circ} 10' 0''$, lat. $50^{\circ} 24' 21''$ (Fig. 3), and CXVIII. S.W. 15 a, Quarry near Fursdon, lon. $4^{\circ} 6' 15\frac{1}{2}''$, lat. $50^{\circ} 24' 39''$ (Fig. 4).

A similar parallelism is often to be seen where a well-shapen porphyritic felspar occurs, the adjacent laths lying along the straight sides of crystal and bending round the ends like straws on the surface of water flowing past a bridge pier; one may cite CXVII. S.E. 13, Quarry near Coombe (Fig. 2).

In all normal dunstones the felspar laths are very numerous, rising in number in some specimens until little interstitial matter is left. Exceptions are purely local and are found at junctions of dunstone and slate. While the dun sometimes carries its normal structure right up to the junction, there are instances in which it assumes a slaggy aspect, becomes almost opaque and consists purely of undifferentiated material—doubtless originally a glass highly charged with iron.

For statistical purposes the 80 localities from which specimens have been taken have been reduced to 68 in number, by grouping together associated points.

It then appears that about one-half of the dunstones

are porphyritic, the actual figures being 36 out of 68. The porphyritic tendency is most marked along a belt extending from the highest point of the road leading from Egg Buckland to Widey (CXVII. S.E. 4, near Widey, lon. $4^{\circ} 7' 12''$, lat. $50^{\circ} 24' 8\frac{1}{2}''$) to the Tavistock Road at its junction with Linketty Lane (CXXIII. N.E. 8, Redlands, lon. $4^{\circ} 7' 58''$, lat. $50^{\circ} 23' 47\frac{1}{2}''$), and again at Keyham Quarry and Ford (CXXIII. N.E. 22, Keyham, lon. $4^{\circ} 10' 42''$, lat. $50^{\circ} 23' 11\frac{1}{2}''$), and the detached patch at Devonport Workhouse Quarry (CXXIII. N.E. 18, lon. $4^{\circ} 9' 44''$, lat. $50^{\circ} 23' 19\frac{1}{2}''$), but it is by no means confined to these areas.

The only mineral which occurs porphyritically is *felspar*. The phenocrysts may be either in very perfect crystal outline, as in CXVII. S.E. 13, near Coombe (Fig. 2), or mere irregular plates as in CXXIII. S.E. 10, Devonport Brickfields, lon. $4^{\circ} 9' 58''$, lat. $50^{\circ} 22' 9\frac{1}{2}''$. In other instances the large felspars have been partially reabsorbed and are rounded by solution and invaded also by tongues of the ground mass, a good example occurs at CXXIV. N.W. 18a², Leigham, lon. $4^{\circ} 5' 14''$, lat. $50^{\circ} 23' 48\frac{1}{2}''$ (Fig. 5).

The phenocrysts may be either in large lath-shaped form or of stouter proportions, and both may be present. Sometimes these larger crystals have very considerable inclusions of ground-mass, as at CXXIV. N.W. 14, Quarry near Deer Park Farm, Efford, lon. $4^{\circ} 6' 11\frac{1}{2}''$, lat. $50^{\circ} 23' 26''$, where the larger laths show outer skeletons of felspar enclosing a ring of chlorite with a centre of felspar, while the stouter forms show irregular enclosures; or CXXIV. N.W. 22, Sawpit at Saltram, lon. $4^{\circ} 4' 42''$, lat. $50^{\circ} 23' 9''$, where the larger felspars are none of any considerable size, and many are mere frameworks, so crowded are they with inclusions of the ground-mass. In this same slide are some felspars rounded by solution, and these have few inclusions, this is generally true of all rounded forms in all slides, a fact which seems to point to three generations being at times present.

As to the size of the larger idiomorphic felspars, one cannot give the extreme upward limit, the largest which has been noted among the writer's slides is from CXXIII. N.E. 18, Devonport Workhouse Quarry, 15 mm. $\times$ 6 mm., but a more usual maximum would be 5 mm. $\times$ 2.5 to 3 mm.

The condition of the felspars varies greatly, in some weathered rocks the laths are beautifully clear and fresh,

with at the most only slight invasions of chlorite, as an example CXXIII. N.E. 12, Tavistock Road, end of Russell Avenue, Compton, lon. $4^{\circ} 7' 56''$, lat. $50^{\circ} 23' 43''$. In other specimens even of hard rock the feldspars will be found invaded and attacked along cracks and cleavages by chlorite or carbonate, or both. The extreme is met when but scattered fragments of the feldspar remain as islands in the decomposition products. CXXIV, N.W. 1' & 1°, Bloom-balls Quarry, Egg Buckland, lon. $4^{\circ} 6' 41''$, lat. $50^{\circ} 23' 38\frac{1}{2}''$, yields good examples of both chlorite and carbonate replacing feldspar.

Of special structures, two may be noted, the occasional breakage of an idiomorphic large feldspar, with a wedging of the ground-mass into the cracks as in CXXIII. N.E. 22a, Keyham Quarry; and the frequent occurrence among the laths in the ground-mass of twins in St. Andrew's Cross form, carried to an extreme in CXVII. S.E. 2, Manadon Hill, lon. $4^{\circ} 8' 0\frac{1}{2}''$, lat. $50^{\circ} 24' 11\frac{1}{2}''$, where the feldspar laths are small and cross each other freely, a common form being divergent bundles of laths all crossing each other at a common point near the middle, as though tied together at that point.

A rare form of pseudomorph after the porphyritic feldspars is found in CXVII. S.E. 12, Quarries near Widey, lon. $4^{\circ} 7' 23''$, lat. $50^{\circ} 24' 6\frac{1}{2}''$, here idiomorphic feldspars have been partially replaced by a mosaic of secondary feldspar in stout laths (Fig. 6), it is in this same rock that vesicles have been filled with similar laths.

All feldspar, from whatever locality within the bounds set in this paper, appears to be oligoclase-albite. Iron ores are present in every slide, these are chiefly ilmenite, there would appear to be also some titaniferous magnetite, both the minerals being usually altered to leucoxene. There are also occasional grains of pyrites. The presence of large quantities of leucoxene makes most sections pale by reflected, and comparatively dark by transmitted light. Near junctions with the slates the ground-mass of the dunstones is frequently opaque in consequence of the extreme development of this mineral.

Iron ores are present in varying form and quantity. CXXIV. N.W. 14, Quarry near Deer Park Farm, contains ilmenite in irregular grains and larger forms with crystal outlines. Only a minority of the grains show any change to leucoxene. CXVII. S.E. 13, Quarry near Coombe Farm,

a rock which in unusual hardness and compact texture parallels the last, contains no dusty iron ore, but leucoxene in fair-sized grains having the crystal outline of ilmenite.

Without giving further localities it may suffice to say that some specimens show comparatively little titaniferous iron, and that in minute dust generally distributed, others, still with little iron, present large forms only; the majority of the rocks are thick strewn with dusty ores and show, in addition, a few scattered larger grains; while another class exhibits the ores irregularly developed, some parts of the slide being crowded and some parts comparatively clear, all members of this class will be found to be subject to the disturbing influence of a slate junction, or of slate inclusions.

Pyrites is not often present, it occurs in slides of dunstone from eight localities, and is also found in the diabase of Farm Quarry, CXXIV. N.W. 26a, lon. $4^{\circ} 4' 19''$, lat. $50^{\circ} 23' 30''$. In all cases it forms part of amygdaloids and is nearly always surrounded by a halo of quartz, sometimes with radiate structure.

Sphene in minutely granular form has probably been overlooked in many slides, larger forms have been found in eight localities only, it is always present when the dunstone has been markedly silicified. The best examples come from CXVII. S.E. 4a, near Widey. Honicknowle, Bloomballs Quarry, St. Budeaux, near Fursdon, Townsend Hill and north of Henn Point are other locations.

Quartz is a mineral of purely secondary origin, its presence in amygdaloids will be dealt with hereafter, in addition to this form it sometimes occurs as veins in the dunstones, and occasionally a dunstone is so far permeated with quartz that it may be fairly described as silicified. Examples are: CXXIV. N.W. 34g, Crabtree, lon. $4^{\circ} 5' 20\frac{1}{2}''$, lat. $50^{\circ} 23' 11''$; CXVII. S.E. 4, near Widey; CXVII. S.E. 11c and 11d, St. Budeaux, lon. $4^{\circ} 10' 14''$, lat. $50^{\circ} 24' 44\frac{1}{2}''$.

No *Augite* has been found in any of the sections of dunstones, nor has any *olivine* been seen.

Chlorite is all-pervading, it fills most of the interstices of the ground-mass in nearly every section, where from its form at places it may well represent original augite grains, it attacks and replaces feldspars, and it is the chief material of the amygdaloids. This mineral varies much, colourless in many instances, it ranges to a marked blue-green. In

weathered specimens it is either yellow, golden-brown, olive-brown or orange-brown. The colourless to blue-green series give interference colours between crossed nicols which are either the normal first-order greys (some specimens are nearly isotropic) or abnormal shades of deepest royal blue and indigo, magenta, and brown. The weathered examples show between crossed nicols a deeper shade of the colours which characterise them in ordinary light.

Carbonates are more local in their development. Chemical tests show that, in many instances, calcite, dolomite and siderite are all present. Like chlorite, the carbonates appear in the ground-mass, attack felspars, and form a part of the amygdaloids. In extreme instances carbonates entirely obscure the structure of the rock, a slide in illustration of this is CXXIV. N.W. 1z, Bloomballs Quarry. Highly carbonated rock occurs, among other localities at CXXIV. N.W. 25, Dorsmouth Hill, eastern quarry, lon. $4^{\circ} 3' 10''$, lat. $50^{\circ} 22' 56\frac{1}{2}''$, a second slide from this rock, 25', was in part cleared with acid, when the structure of the dunstone once more became distinct. Similar treatment has been applied to other slides, with like results.

Pure calcite is frequently recognisable, and apparently pure dolomite, but this latter mineral is always subject to some suspicion of isomorphous admixture with the other carbonates.

Vesicles. No single exposure yields, throughout, dunstone which is wholly free from vesicles, and even the small area of a section will usually show many; only six slides in the collection are free from vesicles.

There are rocks, like CXXIV. N.W. 14, Quarry near Deerpark Farm, and CXVII. S.E. 13, Quarry near Combe Farm, which for the greater part of their mass are non-vesicular, but near their junctions with the slates these all become vesicular, and sometimes the steam cavities are unusually large.

From this extreme there is every gradation to rocks which are practically pumiceous, the presence of amygdaloids frequently somewhat masks the true nature of these, but it becomes apparent where the vesicles are empty, either never having been filled, or more probably the filling having been removed by solution.

It is significant that empty vesicles are never found in any number, except in weathered dunstone.

Amygdaloids. The writer has collected statistical information as to the frequency of various minerals in the amygdaloids, with the following result :—

Mineral or Minerals.	Number of localities at which found.
Chlorite only	36
Chlorite and quartz	20
Chlorite and calcite	15
Chlorite and dolomite	9
Chlorite, dolomite, and felspar ..	1
Calcite only	12
Quartz only	10
Quartz and felspar	1
Dolomite only	4
Felspar only	1
Vesicles not present	6

As previously, the total number of localities recognized is 68, and from the fact that the figures in the above table total 115 it will be seen that more than one variety of amygdaloid is usually found in each rock. Thus in CXXIV. N.W. 24a, Dorsmouth Hill, western quarry, the amygdaloids are either wholly quartz, wholly chlorite, or both these minerals in conjunction. The rock at CXXIV. N.W. 30, Quarry near Austin Fort, lon. $4^{\circ} 6' 17''$, lat. $50^{\circ} 23' 55\frac{1}{2}''$, contains some amygdaloids of carbonate, and some of quartz, and some of chlorite, also carbonate amygdaloids with inclusions of chlorite, and quartz with vermiculites of chlorite; with yet another variety, of outer chlorite and central quartz. Six different forms in one section.

The chlorite varies much in colour, covering the same range as described when writing of this mineral as a constituent of the ground-mass. It frequently extends in fibrous radiate groups from the border of the vesicle toward the centre. Sometimes a vesicle is almost wholly filled with small globular aggregates of chlorite, each having a radial structure and showing a black cross between crossed nicols, for example, CXXIV. N.W. 18a, Leigham, not *in situ*, lon. $4^{\circ} 5' 14''$, lat. $50^{\circ} 23' 48\frac{1}{2}''$, here the globulites between crossed nicols appear as dark brown spots set in a deep blue ground, with occasional gleams of magenta. In the same slide chlorite appears as typical vermiculites in quartz amygdaloids (Figs. 7 and 8); a somewhat different form of vermicular chlorite in quartz occurs in

CXXIV. N.W. 30b, Quarry near Austin Fort (Fig. 9). More usually where chlorite joins with other minerals in an amygdaloid it has been the first deposited and forms the outer layer. Instances are not uncommon in which the vesicle has been lined with chlorite but never completely filled. When a rock containing chloritic amygdaloids has been weathered the outer portion only of the amygdaloid may be altered to the yellow or orange-brown variety, the centre remaining unaltered, or the whole extent may be altered.

Chlorite and quartz are found in conjunction very much more frequently near junctions of dunstone and slate than elsewhere.

Amygdaloids of chlorite and calcite, and others wholly of calcite are well shown in CXXIV. N.W. 12, Quarry near Somerford Terrace, lon. $4^{\circ} 6' 51''$, lat. $50^{\circ} 23' 2\frac{1}{2}''$ (Figs. 10 and 11). Chlorite, dolomite and felspar have been found together at one place only, CXXIV. N.W. 30b, quarry near Austin Fort (Fig. 12).

Calcite amygdaloids show repeated twinning, and sometimes the twin planes are curved or even waved, this occurs quite independently of any deformation of the vesicles, and the same slide may exhibit other examples of perfectly plane twinning.

Quartz, like "chlorite and quartz," is almost wholly restricted to the immediate neighbourhoods of junctions with the slates.

Quartz amygdaloids are more usually each one crystal, with occasional and rare radiate forms and equally rare instances of mosaic structure. Fluid inclusions are very common, being practically always present and sometimes, in fact frequently, the fluid is accompanied by a bubble. Moving bubbles have been noted.

Dolomite is sometimes very clearly distinguishable, the best examples come from CXXIV. N.W. 1", Bloomballs Quarry, where the rhombs are well formed (Fig. 17).

Felspar and felspar and quartz are both found forming amygdaloids at CXVII. S.E. 12, Quarries near Widey, lon. $4^{\circ} 7' 23''$, lat. $50^{\circ} 24' 6\frac{1}{2}''$, but up to the present nowhere else. These amygdaloids have been described by Sir Harris Teall as "porphyritic elements, consisting of globular holocrystalline aggregates of twinned felspar (glomeroporphyrific structure)" [*British Petrography*, p. 230]. There can be no doubt, however, that they are

amygdaloids infilling vesicles. Normal forms of felspar phenocrysts occur in the same slide, the vesicles are clearly marked by the dunstones bordering them being finer in grain and more free from leucoxene than the general mass, and some of the vesicles are not wholly filled by the felspars but contain a central irregular kernel of quartz. Now quartz has no place in dunstone as an original mineral (Fig. 13).¹

There is one instance in this same slide of porphyritic felspar being partially replaced by secondary laths of the same mineral. The rock is *in situ* in the locality named, and comes from near a junction with the slate.

The mention in the last instance of a change in the character of the dun at and near the walls of the vesicles serves as a reminder that such variations are not unusual. A more frequent change being contrary in direction to that last described, the dun becoming darker at the margin of the vesicle in consequence of a greater development of iron ores. Sometimes these ores are in dust form, frequently they are arranged in lines and rarely somewhat dendritic markings, a section which just misses a vesicle may thus show an ovoid patch hatched or cross-hatched with such lines, and for the rest unusually fine-grained. Among other localities such vesicle borders may be found at CXXIV. N.W. 24b, Dorsmouth Hill, Western Quarry (Fig. 14).

Pyrites crystals occur in some amygdaloids.

JUNCTIONS OF DUNSTONE AND SLATES, ALTERED SLATES.

It may be best to commence this section with a description of the specimen which led to the enquiry being undertaken.

There is a dyke of dunstone, extending from St. Andrew's Churchyard, down the north side of Basket Street, under the Liberal Club, thence under Bedford Street, almost in the centre of the road, and ending under the Prudential Buildings; an east and west extension such as is typical. It is not shown on the Geological Survey, but it is referred to in the memoir and a marginal development is figured as a schalstein and stated to consist of highly vesicular, decomposed lapilli, as to which later.

This dyke was formerly exposed in Basket Street, and

¹ See note at end of paper.

has been frequently cut through at various points on its course by sewer and other trenches. The opportunities for obtaining specimens have been sufficient along its whole length. It might serve as a type of the more highly vesicular dunstones. Its course carries it at the eastern end (St. Andrew's Churchyard) through the shales which lie to the north of the limestone, it continues in these for a part of its extension westward, but terminates in more ordinary slates under the Prudential Buildings, still but some twenty or thirty feet north of limestone lentiles.

The specimen in question, CXXIII. S.E. 9, St. Andrew's Churchyard, lon. $4^{\circ} 8' 20\frac{1}{2}''$, lat. $50^{\circ} 22' 11''$, was taken from the eastern termination of the dyke at a point a few feet outside the present boundary of the churchyard. It is a junction of dunstone and shale, the latter much altered. On the ground the cleavage of the shale was seen to have been opened, and into the parting short, irregular processes of dun had penetrated. The hand specimen has been sliced across the junction. There is a distinct difference between the shale in contact with the dunstone and that a few millimetres away, and the boundary between these is sharp and defined, emphasized by the polish which has been taken by the harder contact rock. Figure 23 shows the slide prepared from this junction.

There is a clear but irregularly indented boundary between dunstone and slate, a clear boundary also between the slate next to the dunstone and more highly metamorphosed, and that further away. There are four inclusions of slate in the dunstone, fragments broken off and taken up into the molten rock. Cracks which traverse both slate and dun are filled with calcite.

The ground of the dunstone is dark, with much minute iron ore, now all leucoxene. The lath feldspars more distant from the slate are in fair form, near the slate they are contorted and become wavy lines conforming to the outline of the junction.

The dunstone contains some patches of chlorite, and has a few small vesicles which are filled with carbonate, possibly dolomite, in the position of extinction this dolomite is seen to have many parallel microlitic inclusions, producing a schiller effect.

The junction is marked at places by a narrow black border in the dunstone, elsewhere by a narrow, almost

black, border in the slate, a border which graduates rapidly into the general colour of the slate.

The slate nearest the dun (contact slate) is brown, it passes abruptly at a well-defined boundary into a much darker brown-grey rock on the side away from the dunstone. Under moderately high magnifications (360 diameters), and with crossed nicols, the slate nearest the dunstone is seen to be crowded with lath-shaped microlites and irregular flecks of dolomite. There are also numerous oval grains of dolomite, which are darker than the ground in ordinary light, and lighter than the ground with crossed nicols, and each of which extinguishes as a whole. These are larger and more numerous (longer diameter of larger grains 0.13 mm.) close to the dunstone, and have for the more part died out before the outer limit of the contact slate is reached. As a whole the contact slate polarises in blue-greys and shows cryptocrystalline structure, it is obviously a chert. There are numerous minute specks of opaque matter. This same opaque matter occurs in larger grains in the outer slate, and its presence accounts for the deeper shade of colour. As a whole the outer slate is a coarser version of the contact rock, without the microlites and oval patches of dolomite, but with much of that mineral in irregular form.

The slate patches enclosed in the dunstone are of the contact variety, but here the dolomite at places makes a fair approach to rhomboidal forms.

Now nothing in this specimen is consistent with any other interpretation but the intrusive nature of the dyke.

It became desirable, therefore, to collect as many junction specimens of dunstone and slate, and from as many localities as possible, the result has been that no one specimen has been obtained in which the slate fails to show contact alteration. All are consistent with the intrusive nature of the dunstones, and none with these being contemporaneous interbedded rocks.

The metamorphism of the slates takes three principal forms, or some combination of two or more of these three.

- a. Chloritisation.
- b. Silicification.
- c. Dolomitisation (in a minor degree).

Junction specimens have been obtained from 36 localities, and although these are fewer in number than those from

which dunstone has been taken, yet they cover the same area and are well distributed over it. There can be no doubt that the collection is thoroughly representative.

The Geological Survey indicates 32 localities, from three of these the writer has been excluded by the military, from each of the remainder junctions have been obtained and from several additional positions not shown on the survey map.

Since chloritisation, to some degree, is almost universal, in the following table the term has only been applied where this change approaches completeness, and other minerals are relatively negligible.

The results when summarized are as follows :—

Nature of alteration.	Number of localities where found.
<i>Chloritisation</i>	18
<i>Silicification</i>	
(a) To chert	11
(b) To granular rock	11
<i>Dolomitisation</i>	
(always additional to one of above)	12
(7 in chert, 5 in chlorite, those in granular rock not counted.)	

It will be noted that at many places more than one form of contact alteration is found.

Chloritisation. This change, when complete, is very striking. A perfect example is represented in CXXIV. N.W. 24b, Dorsmouth Hill, western quarry. The junction of slate and dunstone is clear, decided, and approximately straight. There are a few small patches of quartz, starting from the dunstone and irregularly penetrating the slate for a short distance, ending in intergrowths of quartz and chlorite. There are some very small irregularly branching aggregates of quartz in the slate. The slate is otherwise wholly altered to a very pale transparent chlorite, which between crossed nicols appears as a minutely specked mixture of deep blue and brown. With high powers the fibres of the blue chlorite can be detected.

Chloritised slate often shows a definite direction of extinction for the whole mass, due to the lamellar structure of the chlorite, all the lamellæ lying parallel, and simultaneously extinguishing when their plane is parallel to either diagonal of the nicols.

In some slightly weathered examples this structure gives

the rock a pearly sheen, tinged usually in green shades, as an instance, CXXIV. N.W. 27b, Woodford, lon. $4^{\circ} 4' 15''$, lat. $50^{\circ} 23' 50''$, this slide, cut parallel to the chlorite structure, shows a high degree of lustre. A greater degree of weathering leads to the chlorite becoming iron-stained.

Silicification, to the extent of *chert* formation, is more frequent in fragments or masses of slate caught up and included in the body of the dunstone, but may also be found in some contact specimens, such as that from St. Andrew's Churchyard, above described.

The origin of the cherts is an important question, both Mr. Ussher and Dr. Flett found arguments on their association with the dunstone, which involve conclusions that cannot be maintained if the cherts are proved to be altered slates.

Dr. Flett writes (page 96, Survey Memoirs): "It is curious to note that the first two of these rocks (Scottish and Californian) have a marked pillow-structure in the field. This peculiar feature is exhibited by some at least of the Upper Devonian lavas of the Plymouth area, as was observed by Mr. Ussher and the writer at the cuttings in progress south of Saltash. Moreover, the Scottish rocks and the California rock are accompanied by cherts, and at Henn Point, Saltash, and in Devonport Workhouse Quarry grey cherts rest on the Devonian lavas or are involved in their mass, perhaps by shearing. The pillow lavas of Mullion Island belong also to this group, and radiolarian cherts accompany them."

Neither at Devonport Workhouse Quarry nor at Henn Point do the cherts rest on the igneous rocks, in each case they form inclusions. A photograph of the cherts north of Henn Point faces page 83 of the Memoir, and a description occurs on that page. Mr. Ussher writes: "The question as to the age of these rocks is complicated by the occurrence of chert beds interstratified with the vesicular igneous rocks of the coast section in one place between Wearde Quay and Saltash, at about 100 yards north of Henn Point (Plate II). The interbedded cherts terminate abruptly against igneous rock and, until a recent visit to the section with Dr. Flett, I considered them as part of an overlying interbedded series of Lower Culm chert and lava let down by a fault. The vesicular igneous rocks here and at Devonport Workhouse Quarry (Fig. 15, p. 92), where chert is also present among the in-rolled interstitial

sediment, exhibit characteristic pillow-structure, and detached pillows with concentric lines of steam cavities are found in the neighbouring slates. Dr. Flett remarks, after making an examination of microscopic sections of the cherts associated with the pillow lavas : " Several of these cherts show small, pale, rounded spots which have dark centres and are exceedingly like radiolaria, but under the microscope no structure is discernible in these spots which would enable us to say with certainty they are radiolarian. They seem to be clusters of minute grains of dolomite." Dr. G. J. Hinde confirms that these are not radiolarian cherts and Dr. Flett proceeds, possibly with reference only to other specimens, from Forder Lake : " It is interesting to observe, however, that they are all true cherts, not baked shales, and that they do not seem to have been formed from the silicification of limestones," and further : " The Culm cherts from this sheet (348) have a distinct character from those above mentioned."

He does not here carry to a conclusion his arguments based on observation, that is done in a joint paper by Mr. H. Dewey and Dr. J. S. Flett which appears in the 1911 volume of the *Geological Magazine*, here on page 244 *et seq.* occurs the following passage : " As already stated the spilitic rocks occur typically as submarine lavas in regions remote from shore-lines where the water is of considerable depth. These are also in a high degree the conditions that seem favourable for the deposition of siliceous organic deposits. The association then is a natural one, just as radiolarian cherts occur with fine graphitic shales and limestones.

" But this is not the whole truth. How often do we find the cherts nestling in the hollows between the pillows even where limestones are few or absent, and where the sediments are of rather coarse grain and belong to shallow-water facies. In Cornwall pillow lavas are found in the Middle and Upper Devonian ; the attendant sediments are shales and grits, but Ussher found that between the pillows of the lava on the shore at Saltash a few thin beds of chert occur, and in microscopic section they appear to be of radiolarian origin."

A theory is then developed that organisms with siliceous tests grow more freely where the sea-water has an ample silica content. That the pillow-lavas as they cooled down exhaled vapours or solutions of magmatic origin, rich in

dissolved silicates of soda and other bases. That any excess of these not expended on rock alteration escaped into the sea-water. "In this way precisely those conditions were provided which are most favourable to the rapid multiplication of siliceous protozoa such as radiolaria. As the spilitic rocks are generally found at some distance from the shore, in quiet waters where there was little sediment and current action was at a minimum, the radiolaria, though they may have been of slow growth, were not carried away."

In considering this it is first necessary to revise and supplement the field evidence. It is surprising that a paper published in 1911 should refer to "chert between the pillows of the lava" on the shore near Saltash. The Survey Memoir of 1907 makes it quite clear that cherts form approximately parallel bands, abruptly terminated at each end, and, it should be added, with parallel narrow layers of igneous rock between. The exposure in question does not show pillow structure. In the Memoir it is also definitely stated that these cherts do not contain radiolaria.

As to other pillow lavas of the district, it is stated in the Memoir that isolated pillows occur in the slate outside the igneous mass at Devonport Workhouse Quarry, and isolated patches of chert occur enclosed within that mass, the chert at Henn Point is also within the igneous rock.

The Survey Memoir also mentions pillow structure on the south shore of Weston Mill Creek, not far from Weston Mill. The writer would hardly dignify this by the name of pillow structure, but there are irregular intrusions of dunstone into the slate. The slate in contact with the dunstone and also the slate inclusions are here partly chloritised, partly silicified, but no chert has been found.

Two other localities, not mentioned in the Memoir, have yielded pillow structure. One of these, the western end of the Saw-pit Quarry at Saltram, CXXIV. N.W. 22a, is still open to inspection. The slate has been caught up and rolled between the pillows in thin layers of perhaps an inch in thickness. It has been mainly silicified and has a granular structure, very unlike chert; it has also been locally chloritised. The other was a transient exposure in some excavations made at the head of Lovell Road, Thornhill, CXXIII. N.E. 17b; here the slate is wholly chloritised, and affords a typical example of that type of

alteration. There are also pillows on the western margin of the dunstone at Henn Point, CXXIII. N.W. 3. These are in contact with dolomitic limestone. Thus there exist no known local examples of chert "nestling in the hollows between the pillows," or of radiolarian chert associated with pillow structure.

It seems improbable that magmatic exhalations in solution should act as fertilisers for the intensive local culture of siliceous marine organisms, a culture so local and restricted that its products should be confined to the surface of the very rock from which the emanations arose. And it seems impossible to predicate a shallow sea so stagnant and devoid of all motion, whether from tidal influence, current or wave, that the skeletons of these minute organisms should be left to settle undisturbed. The radiolaria would have to live and die and leave their skeletons all within spaces to be measured by a few feet of horizontal extension.

When we further remember that as far as Dr. Flett's evidence goes the cherts are here confined to inclusions in the dunstones the difficulties become insuperable, no influence could grow marine organisms within the body of the dunstone. The one example of chert outside the igneous mass, but still associated with it, is from St. Andrew's Churchyard, and there it is obviously a contact phenomenon.

True cherts which are comparable to that found north of Henn Point have been grouped with a few others of less decided character. The localities for the more perfect examples are : CXXIII. S.E. 9, St. Andrew's Churchyard ; CXXIII. N.E. 18d and 18d', Devonport Workhouse Quarry, lon. $4^{\circ} 9' 44''$, lat. $50^{\circ} 23' 19\frac{1}{2}''$; CXVII. S.E. 11a''', etc., St. Budeaux ; CXVII. S.W. 1a, North of Henn Point, lon. $4^{\circ} 12' 37''$, lat. $50^{\circ} 23' 59''$; and CXVII. S.W. 2, North of Henn Point, lon. $4^{\circ} 12' 35''$, lat. $50^{\circ} 24' 1\frac{1}{2}''$. The chert from St. Andrew's Churchyard has already been described, the dolomite present in it is largely in granular aggregates, but with some lenticular crystals, and a few rhombs ; it is a contact rock.

Devonport Workhouse Quarry yields chert as inclusions in the igneous rock, no contact chert has been found, and no chert has been discovered in the general mass of the slate. CXXIII. N.E. 18d contains small patches of dolomite, the smaller of which show simultaneous extinc-

tion over their whole area. The dolomite is irregular with a marked tendency to oval forms.

St. Budeaux Quarry is at present in "slate-and-dun" rock (see later). Some of the slate inclusions are some inches in diameter. Chert occurs among these inclusions, other inclusions are wholly chloritised. A number of slides have been prepared from the cherts of this quarry. CXVII, S.E. 11a''' and 11a'''³ have been selected for description and illustration. 11a''' shows both dunstone and chert, there is a cross-section of an intrusion of dun in the chert, and an inclusion of chert in the dunstone. The chert is typical and cryptocrystalline. There are comparatively large oval spots of dolomite in the chert near its junction with the dun, these have dark centres, then frequently a clear ring, then a dark ring, and then a clear outer margin, each spot extinguishes throughout simultaneously. This slide is cut parallel to the slight indication of slate cleavage still left in the chert. 11a'''³ is a slide from the same rock cut perpendicular to the cleavage. The dolomite grains are all seen to be lenticular or to tend to that form. The spots are thus lenticular crystals of dolomite. The lath felspars in the dunstone are all parallel to the junction with the chert (Figs. 20 and 21).

North of Henn Point is the exposure figured and described by Mr. Ussher. The chert is here in a series of contorted, narrow, parallel beds abruptly terminating against the dunstone at either end, between the beds of chert the dunstone has forced itself, and thus we get alternate layers of slate and dun. This form of structure, to one who is familiar with the larger inclusions of sedimentary rocks sometimes taken up by igneous intrusions, bears its own interpretation. It is the old problem of the apple and the dumpling, with the added feature that the apple has been sliced. And the solution is the same, the apple found its way inside the crust when the dough was plastic. This chert was formerly a mass of shale, broken off its parent rock and caught up by the dyke on its intrusion. No suggestion of subsequent shearing or contortion and no parting of the igneous rock after its consolidation, with subsequent rejoining of the broken parts, will stand the test of inquiry either here or elsewhere where these chert inclusions are found. CXVII. S.W. 1a is a slide which shows a chert still containing some clay-slate needles, and with small, rather irregular spots of dolomite. CXVII. S.W. 1a'

is another slide of the same rock. It is traversed in one direction by wavy, crinkled, dark lines, and in another by comparatively straight cracks, filled with quartz mosaic. The dolomite is in very fair-shapen prisms, mainly long and narrow, and up to 0.44 mm. in length. A few rhombs of dolomite occur. This mineral is practically confined to the neighbourhood of quartz-filled cracks (Fig. 22).

CXVII. S.W. 2' lies north of CXVII. S.W. 1. The slate occurs as small inclusions in the dunstone, at places it is granular and contains much chlorite and at places it is a chert with oval dolomites, and a little chlorite at the junction with the dunstone.

We have thus traced the dolomite patches, which have been supposed to resemble radiolaria, from mere granular aggregates, through lenticles of perfect crystal structure, up to prisms and rhombs of perfect crystal structure and form.

As to the chert itself, there is nothing in its texture or nature which negatives or tends to refute the obvious conclusion that from the manner of its occurrence it is an extreme form of contact metamorphism of a slate or shale in the presence of a molten igneous mass.

Two perfect cherts occur as contact rocks elsewhere in the neighbourhood, one equally perfect is found at St. Andrew's Churchyard, and all these may be traced back from the junctions to normal slates.

The diabase of Plaistow Quarry, King's Tamerton, which will probably be accepted as an intrusive rock, has converted the adjacent slate into a true chert.

Silicifications of the granular type are only divided from the cherts by artificial criteria; a coarser grain, some clearer indication of the original cleavage, or the presence of other secondary minerals. CXXIII. N.E. 24b. North of Camelshead Bridge, lon. $4^{\circ} 10' 56''$, lat. $50^{\circ} 23' 54\frac{1}{2}''$, is an exposure of hard, exceedingly fine-grained dunstone, the slate in contact is minutely granular with small patches and strings of quartz mosaic, and close to the junction a very few spots of dolomite. A few small flakes of white mica have also been developed. The junction is irregular and small tongues of dunstone penetrate the slate. CXVII. S.E. 17a. Weston Mill Creek, is a junction specimen, the dunstone is quoted by Mr. Ussher as an example of pillow structure. The lath feldspars arrange themselves parallel to this junction, which is defined but irregular, rounded

projections of slate extending into the dunstone, and of dunstone into the slate. There are one or two cross sections of tongues of dun in the slate, and some slate fragments included in the dunstone. The slate is of the minutely granular type, with some chlorite everywhere, but much chlorite near the junction. It shows occasional more highly chloritic patches. Infilled cracks traverse both dunstone and slate alike in unbroken lines. In some cases they are chloritic within the dun and quartzose within the slate.

CXXIV. N.W. 29a, Old Quarry near Coypool, Marsh Mills, lon. $4^{\circ} 4' 53''$, lat. $50^{\circ} 23' 50''$, a section cut practically perpendicular to the junction. The boundary of dun and slate is somewhat irregular, but clear; none the less, the dunstone, which is fine in grain, includes many slate fragments drawn out and elongated parallel to the junction.

Both it and the closely adjacent slate are traversed by dark brown lines, approximately parallel to the junction. These lines appear to be chloritic. They give the dunstone a markedly schistose appearance. The slate partly extinguishes parallel to the junction. It is minutely speckled when examined in polarised light, and appears to consist of chlorite with much minutely granular quartz. There are numerous cavities clustered in one part of the slate, they have a slight brown lining, and there is reason to believe they represent dolomite, now removed by solution. A small, irregular vein of quartz mosaic penetrates the slate. Slate and dun show mutual interpenetration, and there are cross-sections of two tongues of dunstone in the slate.

DUNSTONE-AND-SLATE ROCKS.

These provide the greater number of the supposed tuffs; it will be necessary to deal with them in some detail. Briefly, they consist of innumerable chips of slate set in a matrix of dunstone. To understand their origin we must start with an ordinary dunstone dyke, where this structure is restricted to a few inches in depth, and a few square feet in area, within the junction of slate and dun. In previous descriptions of slides frequent mention has been made of slate inclusions in the dunstone. At CXXIV. N.W. 12a and b, Quarry near Somerford Terrace, slate fragments here and there occur in the dunstone for a short distance within the junction. Viewed parallel to the junction they present

rounded forms, cut perpendicular to the junction they are seen to be either fusiform or mere wisps much drawn out parallel to the junction and all parallel to each other, the larger felspar laths in the dunstone lie in the same direction. The altered slate contains chlorite, carbonate, some quartz, and a dusty pigment, it shows extinction parallel to its extension. This parallelism of the planes of the slate chips with each other, and with the junction is an universal feature and gives all these rocks, whether mere marginal films on a dyke or large mass of considerable extent, a schistose appearance.

CXVII. S.E. 5c and c", Honicknowle Western Quarry, lon. $4^{\circ} 9' 25''$, lat. $50^{\circ} 24' 28\frac{1}{2}''$. Here the mass of the quarry is a very hard, green-grey rock, a typical compact dunstone. At one point, however, the margin of the dyke for some feet in from the slate is crowded with slate chips. A section cut perpendicular to the junction, which involves its being perpendicular also to the cleavage of the dunstone, shows both slate and dun in elongated forms, with marked flow structure in the latter. The dunstone is darkened in places and wholly without vesicles, is lighter and crowded with small vesicles in other places, the passage from one form to the other is gradual. There are a few stout felspars, one of which has stood across the direction of flow, has been broken, and has caused the slate chips to bend around its ends in a marked manner. The slate is brown, marked by narrow darker lines in the direction of its elongation, traces of its original cleavage. Between crossed nicols it shows ill-determined bands of higher double refraction, extending in the same direction. Here and there in the slate-chips occur small oval spots of dolomite. Chlorite has also developed locally at partings of the slate laminae. Fig. 15 shows the surface of a hand specimen ground parallel to the cleavage of the rock, Fig. 16 the surface ground perpendicular to the cleavage, and Fig. 18 is from a section cut perpendicular to the cleavage.

We may now pass to CXXIV. N.W. 16 and 16a, Crabtree at bend in road, lon. $4^{\circ} 5' 19\frac{1}{2}''$, lat. $50^{\circ} 23' 12''$. Here the dunstone-and-slate forms the whole eastern side of a dyke, which on its western side is ordinary dunstone. This dyke having forced itself between strata of slate and grit contains fragments of both. Flow structure is marked throughout. Both the felspar laths and the chips of slate all conform

in their length to one general direction, that of the cleavage of the rock. There are occasional islands of grit, and isolated grains from the same. The slate is frequently drawn out into wisps, and these and the dun alike are contorted to bend past resisting particles of grit. The original cleavage of the slate is marked by a "cobweb" structure of fine brown lines running the length of the fragments. Fragments are in consequence pleochroic, being as a whole much darker when this structure lies parallel to the longer diagonal of the single nicols, owing to the darkening of the "cobweb" lines in this position. The more deeply coloured the chip, and these vary, the more marked the pleochroism. The slate fragments all extinguish parallel to their length (Fig. 19).

The next locality to consider is CXVII. S.E. 11—, St. Budeaux Quarry. The structure is much the same, but some of the slate chips are chloritised, some silicified, and some are typical chert. In this quarry it takes careful search to discover in the dyke, both sides of which are crowded with slate chips, its narrow core of dunstone without slate inclusions. Sections cut parallel to the cleavage of the rock appear at places to contain lapilli, there being abrupt changes in the colour and texture of the dunstone; but these changes are not always abrupt, and in sections cut perpendicular to the cleavage the gradation between the various extremes of colour and texture is usually clearly traceable. The effect of contact with slate is very usually to darken the dunstone and alter its texture, this is well seen at broad junctions, it is repeated on a microscopic scale where slate chips are enclosed in dunstone.

Finally, we may visit CXVII. S.E. 14, Quarry on Drake's Hill near Weston Mill, lon. $4^{\circ} 10' 2''$, lat. $50^{\circ} 24' 15''$. This is the only exposure which is marked with the word "tuffs" in full on the Survey Map. It is much like the St. Budeaux Quarry, except that no core of dunstone without slate can be found. Comparatively few sections have been prepared; in these the slate chips are seen to be largely charged with carbonates, and so far no chert has been found. Although no core of dunstone has been discovered,¹ yet considerable masses of dun exist which are free from

¹ The writer has since found, in the Drake's Hill Quarry, massive vesicular dunstone free from slate inclusions. There is, therefore, no known instance of a dyke of *dunstone-and-slate* which has not a dunstone core.

slate, and which irregularly penetrate the dunstone-and-slate. They are much too large for lapilli, and much too irregular for bombs.

This then is the evidence as to dunstone-and-slate rock. It has been traced from its smaller development as an intensely local contact rock, up to a dyke in which it appears to constitute practically the whole mass.¹

Dykes of dunstone-and-slate alter the sedimentary rocks which bound them, they even send out small intrusions, such as those which simulate lapilli in the grit which borders the dyke at Crabtree. The fragmental sedimentary rocks found in dunstone-and-slate are of the same nature as those through which the dyke has been forced. This is very clearly marked at Crabtree, where grit as well as slate inclusions are frequent. At St. Budeaux the slate fragments are markedly larger at the margin of the dyke.

No ash or tuff could possibly present all these features. No ash or tuff could part slate and grit as at Crabtree by forcing itself along their common bed, leaving on the one side some grit still adherent to the slate, and on the other side some slate still adherent to the grit, nor could any contemporaneous, interbedded, igneous rocks do these things. The writer concludes that dunstone-and-slate rocks are intrusive dykes or sills which have torn off fragments of their enclosing walls and therewith loaded themselves. Many additional arguments might be adduced in favour of this conclusion, from the facts as above stated. As to the Crabtree exposure, see later, under heading "The Wearde-Compton-Crabtree Grits" (p. 243).

Schalstein Tuffs.—The dunstone-and-slate would probably be claimed as a schalstein, but here it is excluded from the type. Dr. Flett's views as to schalsteins are expressed on page 94 of the Survey Memoir: "*Schalsteins*—Many of these rocks in their sheared state, their abundant calcite and chlorite, and their satiny lustre on the cleavage surfaces, correspond in all respects to the schalsteins of German petrographers. Some of them are undoubted tuffs (Fig. 2, Pl. 4), with original fragmental structure quite evident; but the more vesicular lavas, under the pressures to which they have been subjected may break up into breccias, which are very hard to separate from true pyroclastic rocks. The distinction is often of no great im-

¹ See footnote, p. 239.

portance, as in any case they were a contemporaneous interbedded series." Fig. 2, Pl. 4 of the Memoir illustrates a schalstein tuff from the sewer under George Street, Plymouth.

With great respect, it does indeed seem important to distinguish between tuffs and crushed dunstones, since if no true tuffs are to be found the presumption made by the Survey in favour of the contemporaneity of the igneous series with its surroundings is immensely weakened. The specimen from George Street as an example of a true tuff is an unfortunate selection. It is a marginal development of the St. Andrew's Churchyard—Prudential Buildings dyke, and that dyke is as certainly a flow rock, whether volcanic or hypabyssal, as any which can be found in the United Kingdom, it bears no trace of fragmental structure, even within a few feet of the margin. It has been seen to have such relationship to the sedimentary rocks at St. Andrew's Churchyard that the writer has adopted it as a type of intrusive dunstone. Like all these dykes it shows some local alteration at its margin, due to the reaction of the slates, and like many dykes it has locally yielded to crushing strains at its margin giving rise to "a fine breccia, which is very difficult to separate from true pyroclastic rock." Within a foot of similar rock at the same spot the writer gathered a specimen, CXXIII. S.E., 5, sewer shaft outside Prudential Buildings, lon. $4^{\circ} 8' 30''$, lat. $50^{\circ} 22' 13''$, of which Fig. 24 is an illustration, and this conforms with the general mass, except in that the chlorite-filled vesicles are larger than ordinary. (This illustration also gives an excellent example of the darkened margin of dunstone around the vesicles.)

The writer has not found, in the area now dealt with, any schalstein tuff. There is no single exposure which is, throughout its extent, of a nature, that from the presence of apparent lapilli, might be interpreted as a tuff.

While dealing with this point the occasional presence of apparent lapilli in sections of slate rock should be mentioned. The late R. N. Worth has described one such example from Drake's Island, his slides also contain sections of Crabtree grits which show spots of vesicular dunstone. These have been re-examined, with the experience gained from twenty years' further work. The Drake's Island rock obviously comes from the margin of the dunstone, the lapillus is typical dun, but contains no vesicles, it has been

cracked in two places, and the cracks are occupied by carbonates. There is a dunstone dyke at Drake's Island, which at one place has broken off a block of limestone and included it in its flow. Further field work would have been desirable, but military restrictions prohibited it. The inclusions in the Crabtree grit are highly vesicular, and the writer has been able to match this slide by taking sections of grit practically in contact with the dunstone. The seeming lapilli are cross-sections of small intrusions of dunstone into the grit.

Typical Schalsteins.—Of these comparatively few have been found. The example which best illustrates the structure comes from CXXIV. N.W. 6, Compton Hill, lon. $4^{\circ} 7' 9\frac{1}{2}''$, lat. $50^{\circ} 23' 26''$. The hand specimen is distinctly green, the cleavage surfaces have a satiny lustre.

In a section cut perpendicular to the cleavage plane of the rock a marked schistose structure is seen. The specimen comes from near a junction with the slate. The slide shows irregular lenticles of calcite, frequently tailing off into chlorite. In one part these are set in a normal dunstone with many minute felspar laths (another section presents a porphyritic felspar of 5 mm. in length), but for the greater portion of the slide the calcite is enclosed in a structureless dunstone consisting of bright green and yellow-green chlorite divided by opaque lines. This is a chilled form, and some traces of felspar laths occur. Most of the larger felspars do not exceed 0.8 mm. in length, and are much rounded by resorption, as well as being invaded by chlorite (Fig. 25).

Pillow or Spheroidal Structure.—This has rather frequently been referred to above. It occurs at the margins of dykes, the pillows may be small, but are more usually flattened ellipsoids of about eighteen inches to two feet in longest diameter. There is frequently a thin film of slate wrapped around the greater part of the surface of the pillow. Concentric lines of vesicles are found parallel to the surface within many of the ellipsoids. The structure of the skin of the pillow is finer in grain and more compact than the interior, and the felspar laths in sections from this skin are frequently bent and contorted (see Fig. 1, CXXIII. N.E. 17a x). Many pillows show cracks extending some little depth into the mass in a direction perpendicular to the surface.

When detached pillows are spoken of and described as

separated by some extent of slate from the main mass of dunstone it becomes important to ascertain whether the apparent pillow is really a detached mass or is the cross-section of an intrusion from the dunstone into the slate. The writer has never known an instance of a genuine detached mass being found in the slates.

Apparently this structure is an incident in the flow of the dyke material, the dunstone in contact with the slates becoming cooler and more viscous than the general mass, and being rolled and kneaded against the slate walls by the onward movement of the intrusive rock. As to localities, see above under heading "Silicification of Slates" (p. 233).

Dolomitic Limestones.—These occur in contact with the dunstone at CXXIII. N.W. 3, west side of Henn Point, lon. $4^{\circ} 12' 41''$, lat. $50^{\circ} 23' 54\frac{1}{2}''$; CXXIII. N.E. 15, Quarry near Blandford Road, Compton, lon. $4^{\circ} 7' 16''$, lat. $50^{\circ} 23' 15''$, and at CXXIV. N.W. 34, bend of road at Crabtree. They are all dark, blue-black rocks, weathering brown, and all wholly crystalline of rather fine grain. The example from Henn Point contains quartz. On analysis they all yield lime, magnesia and iron. No theory is propounded as to their origin. Whether the fact has or has not any bearing on these particular rocks, it may be stated that normal limestone occurs as bands in the slates as far north as CXVIII, S.W. 13, Goosewell, near Egg Buckland, lon. $4^{\circ} 6' 18''$, lat. $50^{\circ} 24' 17\frac{1}{2}''$. This resembles the Plymouth limestones, and contains organic remains which cannot be determined specifically.

THE WEARDE AND COMPTON-CRABTREE GRITS.

These rocks are noticed at length in the Survey Memoir, more detail being devoted to the Compton-Efford-Crabtree area than to the Wearde exposure.

It is quite correctly stated that the late R. N. Worth identified some of the Compton grits as tuffs, this was in 1886. Prior to 1895 Mr. Ussher, quite independently, regarded them as "siliceous tuffs contemporaneous with the Upper Devonian slates and volcanic rocks in which they occur." In 1895 Professor Watts examined slides prepared from rocks collected at Efford and reported: "I have not been able to detect any vesicular lapilli in this specimen or any others sliced, so that the term volcanic ash or tuff seems inappropriate to the specimens examined. *Grit* or

volcanic-grit would be better terms." . . . The Wearde specimens were not sliced. Two of these "are nearly quartzites in appearance and do not seem ashy," three "are more ashy looking." Two "have ashy looking layers banded in the slate. Some of the specimens show large fragments of slates." In 1893, previous to this report, Mr. Ussher had noted these Wearde rocks as tuffs.

In 1900, armed with Professor Watts' report, Mr. Ussher regarded the whole Wearde-Crabtree series (if it is a series) as Middle Culm Rocks. In 1907, in the Survey Memoir, he abandons this view, and regards "the Wearde greywackes" as "a local phase in the deposition of Upper Devonian sediments in an area of vulcanicity, the chert and associated lavas must also be Upper Devonian; but if the latter were shown by the discovery of Culm Radiolaria to be of that age, most, if not all, of the contemporaneous volcanic rocks between Saltash and Liskeard would be Devonian-carboniferous." In advocating the Upper Devonian age of these grits he considers the evidence so finely balanced that "no apology is necessary for having entertained and published the contrary view." After a lengthy discussion of the evidence Mr. Ussher sums up: "The intimate connection that exists in the field between these rocks (*the grits*) and the volcanic rocks, is very much more suggestive of contemporaneous than of long subsequent formation." "The fine-banded intercalations of felspathic-looking materials with dark argillaceous films frequently met with in the Wearde and Efford greywackes are easily explainable on the theory of intermittent showers of fine ash successively silted over. Either as ash or dismembered felstones, varying in coarseness and sifted and arranged by the currents produced by the agitation consequent on small submarine eruptions, the greywacke type may be accounted for more naturally than by assuming their derivation from older rocks by denudation (of which in their arrangement and distribution there does not appear to be one particle of proof)."

These quotations will enable us to attack the problem in its eastern field (Compton-Crabtree) with a fair and proper view of Mr. Ussher's reading; we shall have to return to Wearde, on the west, at a later stage.

The Compton-Crabtree grits form an apparently continuous series, extending from the pathfields south of Compton Village to the roadside at Crabtree and beyond,

a total length of over one and a half miles. Such a series would provide a considerable task for any currents due to local volcanic eruptions if these were to be charged with the burden of sifting and arranging them.

It may be well to describe two slides prepared from this grit series, which may be taken as representative. CXXIV. N.W. 16 a 2, lon. $4^{\circ} 5' 19\frac{1}{2}''$, lat. $50^{\circ} 23' 12''$, Crabtree by road. Grit *in situ*. The rock consists of fragments from 2.4 mm. diameter downward to 0.12 mm., not many are under this latter dimension. It comes from near contact with slate, and contains chloritic elaty interstitial material. There are grains which are part quartz and part plagioclase crystals; many grains wholly quartz; many wholly felspar, chiefly plagioclase; some consist of microfelsite; while a fair number are micropegmatite. The quartz shows strings of very small cavities, in many cases fluid and bubble can be detected in these cavities, wherever in fact they are large enough for proper examination.

CXXIV. N.W. 17 a, lon. $4^{\circ} 5' 19\frac{1}{2}''$, lat. $50^{\circ} 23' 21''$. Old Quarry, Crabtree, grit practically *in situ*.

Distinctly coarser as a whole than 16 a 2. Fragments of iron ore, not pyrites, are present, each with a halo of secondary quartz. The assemblage of rock fragments is as in 16 a 2, and the general type of rock is much the same.

The writer agrees that the rocks described are true grits, and would even dismiss the suggested compromise of "volcanic grit." In justice it must be stated that if the presence of vesicular lapilli is to constitute a rock a tuff, then in the slides of the late R. N. Worth, and in some of the writer's slides these are present. But field work shows that the apparent lapilli are only cross-sections of tongues of dunstone, which being in contact with the grit has penetrated it irregularly here and there. This contact of dunstone and grit will be dealt with later.

Now if the grits are of volcanic origin, in the first place their constituent particles are derived from a hypabyssal or even plutonic rather than from a volcanic rock; in the second place they represent highly acid rocks. If they are to belong to the same period of eruption which is said to have given us the dunstones, then a markedly basic and a markedly acid magma must both have belonged to this one period. The inherent improbability of this would put us on our guard. Improbabilities are not, however, to decide the question, Mr. Ussher's sheet anchor lies in his

assertion that there is not one particle of proof that the grits are derived from older rocks by denudation. The proof is available and ample. It has been overlooked, together with the true relation of the grit to the dunstone, partly in consequence of a considerable area of dunstone having been overlooked at Crabtree, and mapped as grit, partly by the failure to detect a bed of rock which is neither dunstone nor grit, and which in truth might easily be missed.

At the bend of the main road at Crabtree, under the fort there is a rock face, cut back in forming the road, which affords an interesting section. Allowance being made for the fact that the section is not perpendicular to the strike of the rock and the width of the various beds being accordingly corrected, we find the following series from west to east.

First a band of unknown width, probably narrow, of black crystalline dolomitic limestone weathering brown; then a band four feet wide of dunstone; in contact with this a pebble bed consisting of dolomitic limestone in actual contact with the dun, and then of limestone, slate, pebbles and gravel, the whole having the general appearance of pebbles set in slate; this pebble bed is three feet in width; in contact with it is dunstone which passes into dunstone containing fragments of grit and slate. This extends for 13 feet, and is continued as dunstone fairly free from small inclusions for another 15 feet, in this occurs a large inclusion of grit, then follow 4 feet of dunstone close set with fragments, and including also grains and fragments from the grit. This makes a total of 32 feet width for the band of dun; which then comes in contact with the main body of the grit to which here and there some slate is adherent to a thickness of 4 inches. Summarised the section runs :—

Dolomite, 4 feet of dunstone, 3 feet pebble bed, 32 feet dunstone, 4 inches of slate, grit.

We may for the moment confine our attention to the pebble bed. The largest pebbles and the smallest gravel are alike thoroughly waterworn. The largest pebble which has been extracted whole is six inches in length and weighs 1 lb. 13 ounces. A peculiarity of these pebbles is that all have been split and cracked by the strain which created the slaty cleavage of the matrix; the parts of the broken pebbles have been very slightly displaced, and

then recemented. Fig. A shows the cracks in one of the smaller pebbles.

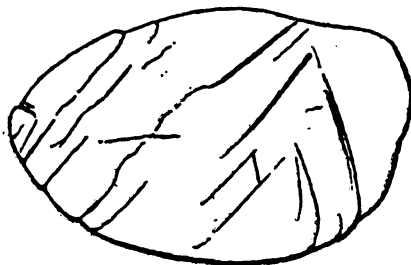


FIG. A.

This pebble bed is identified as CXXIV. N.W. 34, lon. $4^{\circ} 5' 20\frac{1}{2}''$, lat. $50^{\circ} 23' 11''$.

The sections which have been prepared from the matrix of the bed are numbered 34 e and 34 e—.

CXXIV. N.W. 34 e. A slaty matrix, cementing and including sand grains and small rounded gravel. The gravel includes examples of "dappled" felsite. One pebble has secondary outgrowth of felsitic matter. Well characterized micropegmatite also occurs.

CXXIV. N.W. 34 e—. This slide contains a pebble (16×7 mm.) of crypto-crystalline felsite. Some cracks in the pebble have been filled with dolomite, which has decomposed in part and is now brown-stained; there are also in the pebble numerous scattered rhombs after dolomite. Some cracks are in part filled with secondary quartz and felspar in crystal continuity with the walls, and in part with dolomite. A smaller pebble is granular crystalline felsite and is micaceous, white mica in sericitic form. There are also grains of micropegmatite. Over a part of the slide the matrix of slaty substance contains much brown stained dolomite.

The matrix is thus an admixture of slate, sand and dolomite.

Of individual pebbles extracted from the matrix eight have been sliced. These are identified as CXXIV. N.W. 34¹, 34², 34³, etc., here referred to as 1, 2, 3, etc.

(1) This slide shows what the writer terms "dappled structure." Irregular areas which interlock with other, each showing within its own bounds uniform partial

extinction, or when not in a position of extinction showing uniform colour. The centres of many of these areas are occupied by clear quartz, which extinguishes with the area but sometimes polarises in a rather higher colour. Outside the centre occurs in each case a mixture of quartz and felspar, the slide being of such thickness that quartz for the more part gives a yellow tint, the felspar chiefly gives greys only. The structure is thus the felsitic equivalent of "ophitic," the clear central quartz and its outgrowth which includes the felspar being one crystal.

The quartz contains streams of very small cavities. At places this rock shows the beginnings of centric structure. A portion of the matrix is attached to this pebble, it consists of a mosaic of dolomite, with grains of quartz and felspar, such as occur in the grit; one patch of chlorite, and patches of slate also.

There is a little dolomite in the felsite, and there are granular aggregates of leucoxene.

(2) Microfelsite of coarser structure than last, and not dappled. Distinct areas of felspar, in some instances invaded by dolomite along the cleavages. Apparently both orthoclase and microcline are present.

Quartz occurs in large grains with an approach to crystal outline, and contains cavities with both fluid and bubbles. There are groups of cubical pyrites; and scattered rhombs and small groups of dolomite, some altered to brown products. A little chlorite.

(3) A dappled felsite. Thick-set with minute cubes of a red-brown, partially translucent mineral, an alteration product after pyrites?

(4) Texture microgranitic. Minerals, quartz and felspar, no mica present. Both orthoclase and plagioclase, and many small areas of micropegmatite. A few felspars have been attacked by dolomite. There are also patches of dolomite browned by alteration, and well-shapen rhombs of the same mineral.

This rock has the added interest that it shows many of the cracks which have been caused by the crush which the pebble has undergone. In many instances these pass across felspar crystals, and are perhaps 0.4 mm. in width. The damage has frequently been made good by secondary felspar in complete crystal continuity with the broken crystal; sometimes this new growth may include a little quartz, or even dolomite. Even micropegmatite, when

intersected by a crack, has at places sent out a secondary growth of the same structure; while closely twinned feldspars show outgrowths with a continuation of the twinning. There are places, however, where no outgrowth of the damaged crystal projects into or has helped fill the crack.

(5) Microfelsite, with corroded quartz phenocrysts, the cavities in the quartz are very small, but some at least contain fluid and bubble.

(6) Finely granular felsite. Contains cubes of pyrites and some small, irregular forms. This slide also shows cracks, and it is traceable that the refilling is partly in crystal continuity with the older crystals.

This is the complete section of a small pebble, and shows some of the slaty and gritty matrix adherent to it.

(7) Micro-felsite, consisting of feldspars with a distinct leaning to lath form, set in a cryptocrystalline ground.

The feldspar of this rock is perhaps mainly orthoclase. There are no quartz phenocrysts.

The cracks are largely recemented with secondary quartz and feldspar, sometimes in crystal continuity with the sides; but there is much dolomite, largely altered to brown oxide. In places the cement is wholly quartz, forming irregular bands from side to side, perpendicular to the sides.

The slide shows a very little chlorite, cubes of much altered pyrites, and some patches of dolomite.

(8) A cryptocrystalline felsite, with porphyritic feldspars (2.4 mm. in length) and irregular feldspar areas. The porphyritic feldspars are mostly either untwinned or simply twinned, some of the smaller show repeated twinning. There are chloritic patches in this rock, associated with these are zircon prisms, the largest of which is 0.25 mm. in length.

One feldspar is almost wholly altered to dolomite. Brown stained dolomite fills cracks in one feldspar crystal, and the same mineral occurs in scattered rhombs throughout the slide, and also in granular form.

There is some pyrites.

The cracks are narrow, and quartz-filled, considerable lengths of each crack having uniform extinction. Even when a crack traverses a feldspar crystal the cement is quartz.

The ten slides last described indicate considerable

variety in the rocks from which the pebbles have been derived, but all are felsites and all are such as may well be found among the apophyses of a single granite mass, and might be derived from a relatively limited area. The complete absence of tourmaline should be noted, as also the undoubtedly secondary nature of the dolomite and pyrites.

Whatever may have been arguable as to the grits considered alone, these pebbles must have been "derived from older rocks by denudation."

We thus have grits the constituent particles of which agree precisely with their derivation from the same rocks that are found as pebbles in an adjacent and probably originally underlying bed, we have similar grit mixed with the pebbles, and the one logical conclusion is that both are the products of denudation of felsitic rock masses, and have been water carried and water worn. No submarine currents caused by local eruptions could have done the work of completely rounding a stone six inches in length and weighing close upon two pounds. The age of pebble bed and grit remains undetermined; the direction from which this detritus has travelled, and the original site of the parent rocks, alike await further evidence.

If the pebble bed is the basement bed of the series, then the grit is later in date and is succeeded in turn by slates, these slates, near the grits, contain sand grains of similar character.

Now as to the relations of the dunstones and the pebble bed, grits, and slates.

The whole series strikes $63^{\circ} 30'$ E. of N., and dips 60° south-east, thus the pebble bed on the south-eastern member appears to overlie the rest, and the dunstone, which follows the dip of the strata, has the appearance of a dyke, whereas in truth it constitutes two sills, separated by the pebble bed.

The sill which on the suggested order underlies the pebble bed contains inclusions of dolomite rock and of grit, both derived from this bed.

The sill which lies above the pebble bed is in its lower part fairly free from inclusions of any sort, a few feet higher up in the succession it begins to show grit and slate inclusions, next there is a large mass of included grit, and then for the upper four feet, before it comes in contact with the grit it is crowded with slate chips and grains derived

from the grit, becoming an example of *dunstone-and-slate* rock, the chips being the remnants of that slate which still adhered to the grit when the dunstone forced its way approximately along the parting of pebble bed and grit, and of which patches are still in contact with the grit. There are also to be found junctions of slate and dun in which remnants of grit are still adherent to the slate.

Obviously slate and grit must have been in contact and the slaty cleavage must have been developed before the invasion by the sill took place. The dunstone is later than either slate or grit and is intrusive.

As to the dunstone which includes slate chips, and has previously been described as a tuff, see an earlier part of this paper under heading "*Dunstone-and-slate rocks*" (p. 238).

As to the massive crystalline dolomite rock, compare Quarry near Blandford Road, and Henn Point, under heading "*Dolomitic Limestones*" (p. 243).

One hundred and fifty yards west of CXXIV. N.W. 34, beside the military road leading to the fort at Crabtree, is a very considerable exposure of igneous rock, which in colour and texture bears a deceptive superficial resemblance to the grit. This also has been coloured as grit in the survey map. The identifying number is CXXIV. N.W. 32, lon. $4^{\circ} 5' 27''$, lat. $50^{\circ} 23' 10\frac{1}{2}''$. At this point there is a junction of slate and dun, and the following is a description of the slide. The junction of slate and dunstone is, as a whole, clear but irregular, with some mutual interpenetration. The base or ground-mass of the dun is yellow chlorite with lath felspars of rather large size, and iron ores in moderately large form. There are stout felspar forms, in some cases 6 mm. in length, these are invaded along cleavages by both chlorite and dolomite, and minutely speckled with the latter. A brown product from the alteration of dolomite is also prominent.

At the junction of the dun and slate there are some clear, twinned felspars, apparently secondary; and also some quartz, the latter containing an occasional vermiculite of chlorite.

The slate is very transparent, pale olive-brown in colour of slightly varying depth. It is wholly chloritised, and between crossed nicols gives a deep blue with occasional deep green shades. A few irregular crystals of dolomite are locally developed near the junction, together with some of fair form. There are no clay-slate needles.

At *Wearde* there has been a similar mapping of dunstone as grit, and the error is emphasized by written description and a diagram inserted in the text of the Memoir. On page 91 of the Memoir will be found the following entry : "As we proceed from *Wearde Quarry* to *Saltash* the grey slates soon become associated with igneous rocks, a mass of volcanic breccia being first encountered, then large bombs or small detached pillows of vesicular basalt in the slate ; further on at *Henn Point*, masses of basalt alternate or are repeated in the slates."

With a great part of this description the writer is compelled to disagree. The first igneous rocks found east of *Wearde Quay* are massive intrusions of a compact igneous rock which simulates the grit and weathers brown ; then we meet the "volcanic breccia," which is a dunstone containing numerous slate chips, this is at 700 feet east of *Wearde Quay*. Next, near *Henn Point* there is a dunstone intrusion, with pillow structure on its western margin, but the pillows are all in contact with the main mass and certainly not provably detached.

At the small enclosed lawn near the *Defiance* landing stage, which by the courtesy of the officers of that ship the writer was permitted to visit, there is a still greater disagreement between Mr. Ussher and the writer.

The official version will be found on page 87 of the Survey Memoir, with a diagram on page 88. Mr. Ussher writes : "At *Defiance Quay*, through a small enclosed lawn, we obtain access to the diabase quarry. Here the massive diabase, overlain by *Wearde* greywacke and mudstone, is faulted on the east against greywacke and mudstone containing the bomb bed. On the west the bomb bed is also visible overlying hard-baked rock, which is probably separated from the diabase by a concealed fault. . . . A specimen of the diabase sent to Professor Watts was pronounced by him to be a decomposed ophitic dolerite, now a diabase."

On page 100 of the same Memoir, Dr. Flett writes : "At *Defiance Lawn*, *Wearde Quay*, there is a quarry yielding mica diabase, very rich in dark biotite but with little hornblende."

The structure on the eastern side of the quarry is much the clearer, that on the west being naturally obscure and rendered even more so by the growth of creepers and other plants.

Dolerite has been left as plain paper ; grits, mudstones, etc., have been hatched, at the extreme east a small part is more closely hatched, this is in section.

Groups of dots, with the letter V attached, indicate Mr. Ussher's bombs. The fault is shown by two parallel vertical lines. The junction of dolerite and grits, etc., is shown by a strong dotted line.

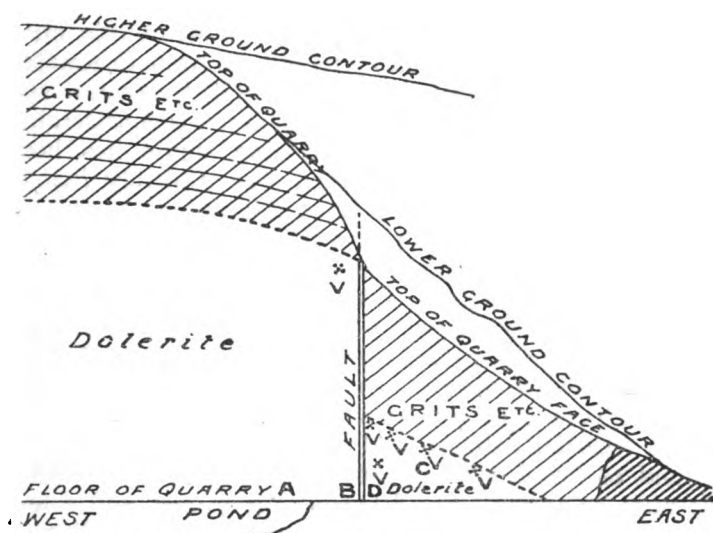


FIG. B.

It will be seen that one "bomb," not indicated by Mr. Ussher, occurs to the west of and almost touching the fault, close to the junction of dolerite with the grit series. All the other "bombs" occur along the line of junction to the east of the fault, except one a little lower in position, and they are wholly included in the dolerite, being nothing more than vesicular portions of that rock.

The difficulty of tracing the junction east of the fault is, in the field, admittedly considerable; this, however, is but an example of the danger of field work unaccompanied by subsequent confirmation with the microscope. The evidence for the "volcanic episode" perishes with the "bombs."

The dolerite deserves detailed consideration. At A on the diagram, over the eastern end of the pond, it is a hard comparatively fresh rock. CXIII. N.W. 5, lon. $4^{\circ} 13' 6''$, lat. $50^{\circ} 23' 49''$. It consists of felspar in areas of irregular, interlocked forms of elongated tendency, the laths mutually interfering and there being no interspaces; mica, pleochroic—straw to deep brown, a little of this mineral appears to be altered to chlorite; pale purple-grey augite in interrupted plates with occasional felspar invasions or inclusions, the augite altered in places to chlorite; apatite in large needles and stout prisms, which at places traverse each one of the preceding minerals; and ilmenite. No hornblende detected. The rock is thus an ophitic mica dolerite, it can be matched by specimens from Ernesettle.

This is but three feet west of the fault, between it and the fault, at point B on diagram, the rock is considerably decomposed, although still hard, the augite has been entirely changed to chlorite, and was probably less in original quantity than at A. Mica still present.

East of the fault, at point C on diagram, the rock is also weathered and brown stained. It has become finer in texture, the individual felspars being much smaller. There are no longer any traces of mica or augite, although patches of chlorite may represent either or both of these minerals. The needles of apatite, although numerous are small. The ilmenite is in small forms.

The vesicular patches yield a yet finer grained rock. A ground of felted felspar, with some interstitial chlorite. No mica or augite. Small forms of iron ores, and a few large crystals of ilmenite. Many very small needles of apatite. A great contrast in structure to the dolerite of the centre of the mass.

The eastern side of the fault, at D on diagram, is bordered by about six inches in width of a hard compact rock of light purple-grey colour, which looks deceptively like a fine grit. This is merely a variety of the rock found at C, but with dolomite playing the part therein taken by chlorite.

To the east of Wearde Quay these fine-grained marginal representatives of the dolerite continue as considerable intrusions. In other words, a dolerite passes into andesite. The whole series shows apatite in large or small forms, and the whole series is easily discriminated from the normal dunstones. This change is accomplished in less than

twenty feet, and takes place in all directions, vertical, inclined and horizontal alike. In the quarry the fault has caused a relative lowering of the strata on its east side to the extent of 10 feet, and thus the marginal texture is now in juxtaposition with rock not far removed from the doleritic form, this and its somewhat deceptive macroscopic resemblance to the grit series has brought Mr. Ussher's diagram into being.

As to the Wearde grits, Professor Watts describes these from hand specimens, no sections were prepared: "Two of these are nearly quartzites in appearance, and do not seem ashy." Three "are more ashy looking." Two "have ashy looking layers banded with slate. Some of the specimens show large fragments of slates" (p. 88, Survey Memoir). Mr. Ussher says that in the quarry by the road on the north of the railway, west of the Defiance Halt, the grit occasionally contains fragments of chert (p. 86, *op. cit.*).

The writer's sections show that some of these grits are true quartzites; these occur within the region influenced by the dolerite intrusion. There is good reason to believe that this intrusion lies not far below the quarry north of the railway and west of the Halt, CXXIII. N.W. 7, lon. $4^{\circ} 13' 9''$, lat. $50^{\circ} 23' 51''$. Fragments of slate included in the grit of this quarry have been altered to chert, and show small spots of granular dolomite, not as completely or perfectly developed as where the slate has been caught up in a mass of igneous rock. The slate has been somewhat softened, so that grains from the grit have been driven into it. The grit itself is fine-grained, and might be described as a quartzite. The so-called "ashy" specimens from this locality come from bands of grit in which some of the felspar grains have been partially kaolinised.

A good example of the quartzite grit occurs about 60 yards east of the Lawn Quarry, in Defiance gardens—CXXIII. N.W. 6, lon. $4^{\circ} 13' 4\frac{1}{2}''$, lat. $50^{\circ} 23' 49''$. The rock is a quartzite, the original detrital grains measure from 0.25 mm. in diameter downward, there is a little flaky chlorite, and there are a few grains of sphene. The grains are quartz and both orthoclase and plagioclase felspar, a very little of the latter shows multiple twinning.

As a whole the Wearde grits are distinctly finer in grain than the Compton-Crabtree series. Grains of micropegmatite occur, but are very rare. Interbedded mudstone

or sandy shale is much more prominent at Wearde, these rocks contain a little white mica, a little granular sphene, and an occasional crystal of zircon, for the rest they are mainly very fine sand with some chlorite.

It has been noted above that some of the grits at Crabtree have a slaty matrix, as also have some at Compton; this is especially marked in one of the late R. N. Worth's slides from Compton, in which rounded feldspars form eyes in a granular slaty base, which streams around them with marked flow-like structure. These rocks graduate into normal grit.

Now near Camel's Head in a quarry behind some houses in the main road north of the bridge, CXXIII. N.E. 23, lon. $4^{\circ} 10' 55''$, lat. $50^{\circ} 23' 51\frac{1}{2}''$, there occurs a rock which has been classed as a tuff, but which in fact is identical in structure with the more markedly slaty grits, with one exception, the presence of some carbonates. Briefly described, this has a grey, minutely granular matrix, with patches and veins of carbonates. It contains rounded and some broken forms of feldspars, mostly showing lamellar twinning. A slide cut perpendicular to the cleavage of the rock shows the matrix traversed by wavy brown bands, bending around the feldspars. The hand specimens contain fragments of slate, which show no alteration such as might be found in the presence of molten matter.

A similar rock from the Devonshire end of Saltash Bridge is represented among the slides of the late R. N. Worth. Here, however, there are areas of vesicular dunstone of precisely the type which occurs at contacts, having an approximately opaque ground-mass. These areas are intruded into and irregularly fit the surroundings; a matter which, remembering similar intrusions of dunstone into more normal grits, can be explained by proximity to a mass of dunstone. It may be a mere coincidence that neither in the Camel's Head nor in the Saltash Bridge slides are any grains of quartz.

These rocks have been diagnosed as ashes, but the ground-mass is difficult to reconcile with that theory. If ashes they could not belong to the dunstone series, and indeed the penetration of the Saltash Bridge rock suggests that it fore-dated the dunstones.

Now the Compton-Crabtree specimens do contain quartz in quantity, and possibly the similarity in general appearance does not mean identity of origin. As an hypothesis it

might be suggested that the Camel's Head—Saltash Bridge examples are fine ashes and rounded felspar fragments derived from the dolerite series, which might conceivably give such a ground-mass. This series is well developed to the north of the exposures, it is later in date than the grits, but so also are the dunstones, and these latter might well be later than the dolerite.

An alternative is mylonitic degradation of masses of igneous rock of the dolerite series, but if so it is difficult to see how the felspars should have escaped comparatively unharmed, or how the fragments of normal slate should have survived.

Against the ash hypothesis is the fact that none of the rounded felspars have any recognisable igneous rock attached to them, and one cannot understand how, if they were derived from a volcanic vent, they should be so clean, or there should be such an entire absence of lapilli.

Thus any and every attempted explanation has its difficulties, of which perhaps the least is the absence of quartz.

CONCLUSIONS.

(1) The Plymouth dunstones are intrusive rocks, occurring in dykes and sills, probably more frequently as sills.

(2) The series examined contains no extruded lavas and no dunstone tuffs.

(3) The Compton-Crabtree grit is accompanied by a bed containing large and small pebbles of rocks which agree in structure and mineral composition with the grains of which the grits are composed. The grits are the product of denudation of pre-existing igneous rock masses.

(4) Some dunstone at least is later in date than the Compton-Crabtree grits.

(5) The dolerite of Defiance Lawn is later in date than the Wearde grits.

(6) The cherts found associated with the dunstones are contact-metamorphosed slates, they contain no radiolaria.

(7) When the dunstones were intruded into the slates these already had a developed slaty cleavage.

If in the summarised statement of the results of his survey, which this paper presents, the writer has combated the views put forward by Mr. Ussher and Dr. Flett, he has also recanted opinions formerly held by his father

and himself. The Geological Survey Memoir has borne the brunt of criticism because it is the latest and most complete review of the geological structure of Plymouth and its surroundings. A local workman in the course of years has opportunities of observation which are denied to the official surveyors, and, as a result, may well find himself at variance with their conclusions. Such variance, even when expressed in controversial form, is consistent with a real gratitude for the work which they have done.

NOTE.—A surface boulder (CXVII. S.E. 20a, *lon.* $4^{\circ} 7' 46''$, *lat.* $50^{\circ} 23' 3''$, near Widey Court) has since yielded two additional forms of amygdaloid. *a.* Within a border of felspar laths, a kernel of quartz thick set with chlorite vermiculites, similar to those shown in Fig. 8. *b.* Within a border of felspar laths, a kernel of chlorite, similar to the mineral forming the border of the amygdaloid in Fig. 10. The felspar laths in each case are precisely like those in Fig. 13. (See page 227.)

REFERENCE TO ILLUSTRATIONS.

IN TEXT.

- Fig. A* (page 247).—Drawing of felsite pebble, from CXXIV. N.W. 34. Bend of road at Crabtree. Showing recemented cracks. *Natural size.*
Fig. B (page 253).—Diagram of face of Quarry at Defiance Lawn, eastern end. The fault produces a vertical displacement of ten feet.

PLATES.

PLATE I.

- Fig. 1.*—CXXIII, N.E., 17a^x. Head of Lovell Road, Thornhill. *Ordinary light, magnification 30½.* Curved lath felspar in outer skin of a pillow of dunstone.
Fig. 2.—CXVII, S.E., 13. Quarry near Coombe, King's Tamerton. *Crossed nicols, magnification 58.* Flow of felspar laths around angle of large felspar crystal.
Fig. 3.—CXVII, S.E., 13a. Quarry near Coombe, King's Tamerton. *Ordinary light, magnification 18.* Junction of dunstone and slate, showing parallel arrangement of felspar laths.
Fig. 4.—CXVIII, S.W., 15a. Quarry near Fursdon. *Ordinary light, magnification 30½.* Junction of dunstone and slate, showing parallel arrangement of felspar laths.
Fig. 5.—CXXIV, N.W., 18a². Leigham. *Ordinary light, magnification 11.* Crystal of felspar corroded by reabsorption in ground-mass.
Fig. 6.—CXVII, S.E., 12b. Quarries near Widey. *Crossed nicols, magnification 46.* Irregular lath-shaped felspar replacing porphyritic felspar.

PLATE II.

- Fig. 7.*—CXXIV, N.W., 18a. Leigham. *Crossed nicols, magnification 15½.* Quartz amygdaloid with chlorite vermiculites.
Fig. 8.—A portion of last. *Analyser only, magnification 51.*

PLATE I.

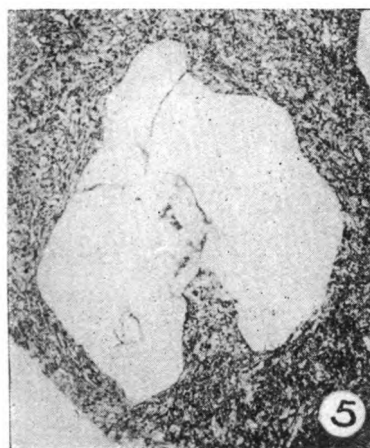
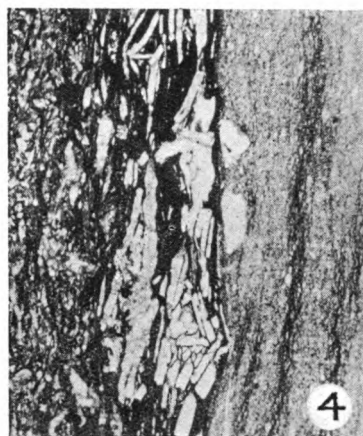


PLATE II.

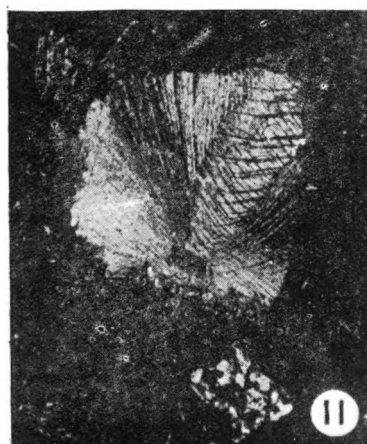
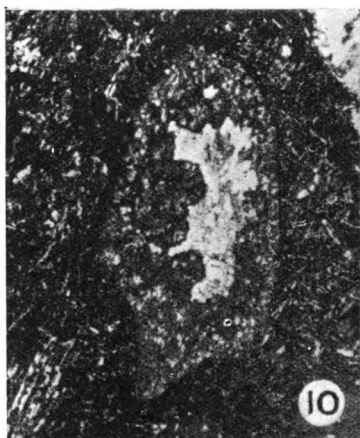
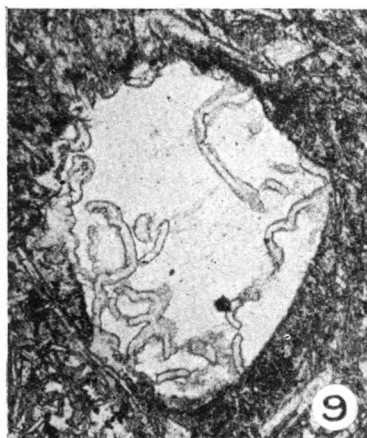
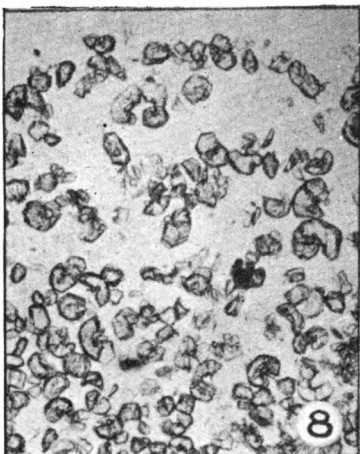
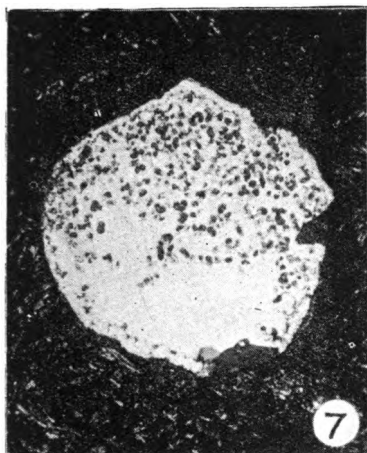


PLATE III.

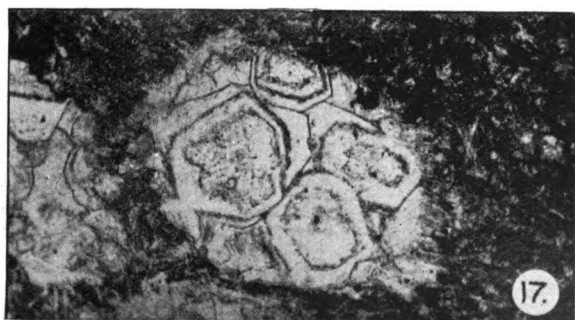
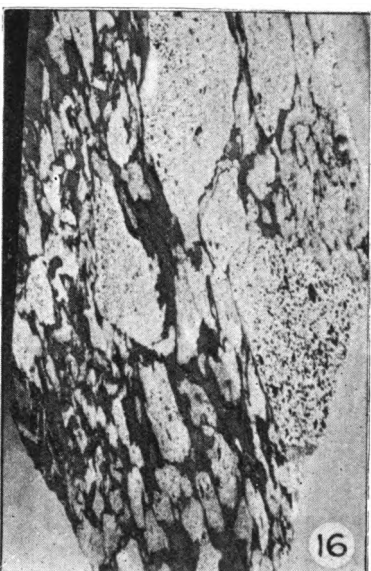
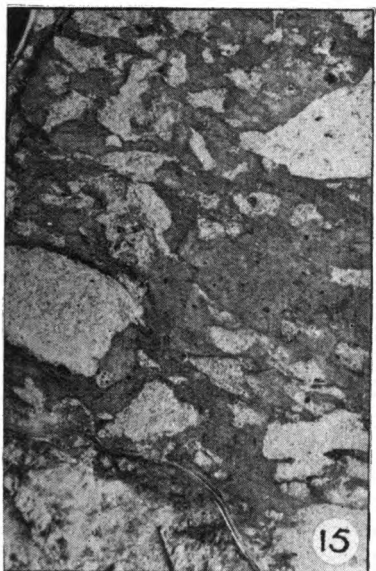


PLATE IV.

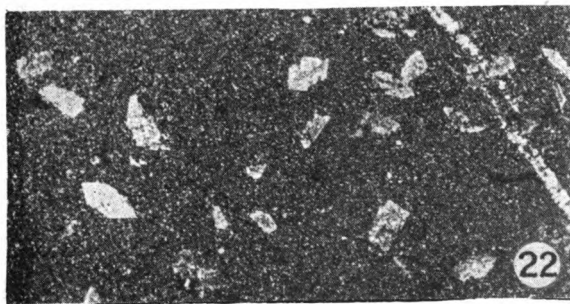
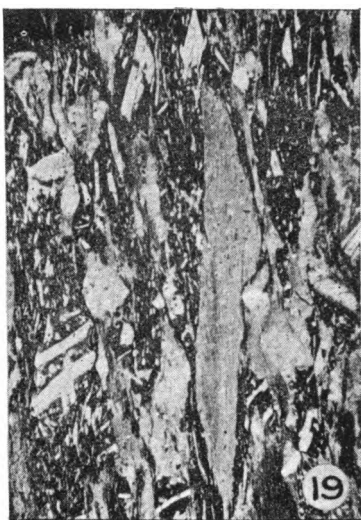
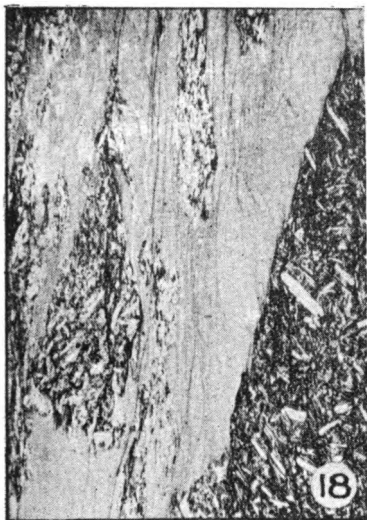
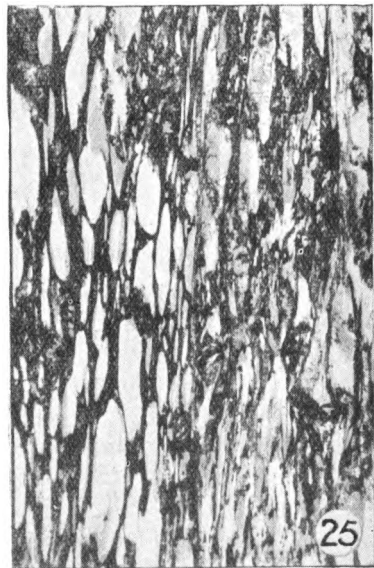
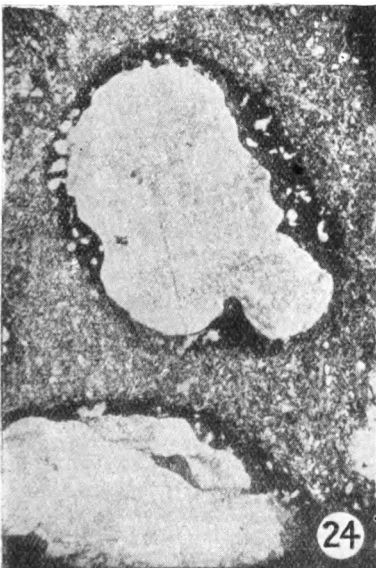
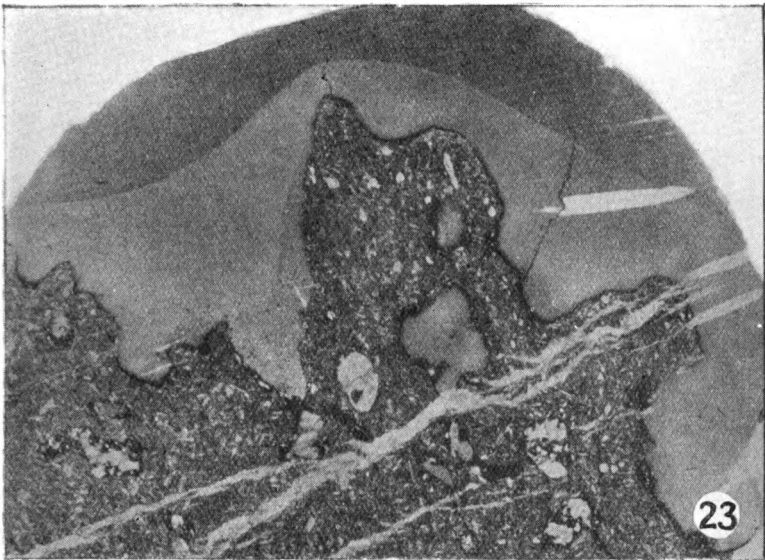


PLATE V.



- Fig. 9.*—CXXIV, N.W., 30b. Quarry near Austin Fort. *Ordinary light, magnification 39.* Quartz amygdaloid with vermicular chlorite.
- Fig. 10.*—CXXIV, N.W., 12. Quarry near Somerford Terrace. *Nicols partly crossed, magnification 28.* Chlorite amygdaloid with calcite kernel.
- Fig. 11.*—CXXIV, N.W., 12. Quarry near Somerford Terrace. *Crossed nicols, magnification 32.* Calcite amygdaloid with curved twinning.
- Fig. 12.*—CXXIV, N.W., 30b. Quarry near Austin Fort. *Nicols partly crossed, magnification 20½.* Amygdaloid chiefly of dolomite, with vermicular chlorite and a few small laths of feldspar.

PLATE III.

- Fig. 13.*—CXVII, S.E., 12. Quarries near Widey. *Crossed nicols, magnification 30½.* Feldspar and quartz amygdaloid, the quartz in position of extinction.
- Fig. 14.*—CXXIV, N.W., 24b. Dorsmouth Hill, Western Quarry. *Ordinary light, magnification 70.* Part of border of vesicle darkened by iron ores. The upper part of the figure is a portion of the amygdaloid which fills the vesicle.
- Fig. 15.*—CXVII, S.E. Honicknowle Western Quarry. *Ordinary light, magnification 2½.* Surface of hand specimen ground parallel to cleavage, showing mingled slate and dun.
- Fig. 16.*—As last, but surface ground perpendicular to cleavage.
- Fig. 17.*—CXXIV, N.W., 1'''. Bloomballs Quarry. *Ordinary light, magnification 57.* Dolomite amygdaloid, showing crystal form.

PLATE IV.

- Fig. 18.*—CXVII, S.E., 5c. Honicknowle Western Quarry. *Ordinary light, magnification 11.* Cross-section, perpendicular to cleavage, fragments of slate included in dunstone.
- Fig. 19.*—CXXIV, N.W., 16. At bend in road, Crabtree. *Ordinary light, magnification 12.* Section perpendicular to cleavage of rock, slate chip in dunstone.
- Fig. 20.*—CXVII, S.E., 11a'''. St. Budeaux Quarry. *Ordinary light, magnification 30½.* Dolomite lenticles in slate inclusion (chert) in dunstone. Section cut parallel to cleavage of slate.
- Fig. 21.*—CXVII, S.E., 11a'''. As last, but section cut perpendicular to slate cleavage.
- Fig. 22.*—CXVIII, S.W., 1a'. North of Henn Point. *Crossed nicols, magnification 30½.* Dolomite prisms and quartz vein in altered slate (chert) from large inclusion in dunstone.

PLATE V.

- Fig. 23.*—CXXIII, S.E., 9. St. Andrew's Churchyard. *Ordinary light, magnification 3½.* Junction of dunstone and sedimentary rock, locally altered to chert with dolomite grains. Shows irregular penetration of the sedimentary by the igneous rock, and more intense alteration effect immediately bordering the dunstone.
- Fig. 24.*—CXXIII, S.E., 5. Bedford Street, sewer shaft outside Prudential Buildings. *Ordinary light, magnification 10.* Chlorite-filled vesicles with borders of darkened dunstone.
- Fig. 25.*—CXIV, N.W., 6. Hill from Lower Compton to Higher Compton. *Ordinary light, magnification 30½.* Section cut perpendicular to cleavage of dunstone. On the left, structureless dunstone enclosing numerous chlorite amygdaloids; on the right, dunstone enclosing calcite amygdaloids.

THE CANON IN RESIDENCE.

BY THE REV. J. B. PEARSON, D.D.

(Read at Plymouth, 20th July, 1916.)

PERUSING quite recently a notice in the *Devon and Cornwall Notes and Queries*, Jan., 1915, on the ancient almshouses adjoining Catherine Street and not far from the N.E. corner of the Close at Exeter, I observed that the founder, John Stevens, in a petition to the King, describes himself as Chanon, though unworthy, and *Residencier* in the Cathedral Church of Exeter : and although the petition itself is without date, he pledges himself that prayers shall be offered for the welfare of His Majesty, also for our sovereign lady the Queen, and that high and noble Prince Edward your son ; and subjoined to this petition is a copy of the will of the founder, dated 20 June, 1457.

King Henry VI was born 6 Dec., 1421, and on his father's death at Vincennes, 31 Aug., 1422, succeeded to the title. In 1445 he married Margaret of Anjou, and their son Edward, born 1452, would be the Prince Edward named in the petition : he lost his life at Tewkesbury in 1471, so that the terms of the petition are quite genuine, as Henry VI only lost his power in 1461, though he survived for a few years more. But what arrested my attention was the term *Residencier*, at so early a date. Recently I read a little of a new novel, quite up to date, *The Canon in Residence*, but I had generally connected such a title with post-Reformation church usages : and I confess it was new to me to find the title *residencier* at so early a date. With some fair general acquaintance with Church History, I was quite aware that the enjoyment of a mediæval dignity in no sense involved residence or actual discharge of the functions implied : but still, I may say that to find a canon describing himself as a residentiary in the middle of the fifteenth century was a surprise to me. "Habemus

confitentem reum" : he pleads to being what many of his fellow canons were not, and in many churches could not be, i.e. a residentiary.

As an octogenarian, and having visited nearly all the English cathedrals at various times in my life, I know that the usual seat of the Dean is on the right hand at the entrance of the quire ; while the Canon in residence takes the seat to the left. At Ely, where the bishop took the place of the abbot in 1106 A.D., he occupies the seat to the right ; where the dean and canon sit I cannot say offhand. But when did the canon in residence come to have so definite a place and duty ? This question I could not answer at once, so I will mention the steps I took to inform myself more correctly on this matter.

The ruling authority on this point is the Chapters Act of 1840, 3 and 4 Vict. c. 113, which at the present time, with some few modifications, for better for worse, either interprets or supersedes the customs of a cathedral. For the dean it prescribes eight months' residence in place of the ninety days ordered in 1603, and three months for each of the resident canons, who, as a rule, are four in number. At the time the Act was passed, and for many years after, it was customary for resident as well as non-resident canons to hold benefices and to reside on them. But that the usage throughout England was much the same in 1853, when I first began to give intelligent thought to any question of law and order, as it was 250 years previously, will be obvious to anyone who will study carefully the Canons enacted in 1603-4 by Convocation and King James I, especially those numbered XLII, XLIII, XLIV. How far these canons are now held to be in force, *in viridi observantia*, it is not for me to express an opinion : only it seems obvious that meetings of the chapter for business purposes would from time to time be necessary. At Exeter in 1831, previous to the Act of 1840, there were nine residentiaries, of whom however the dean was one, and the bishop as treasurer, *in commendam*, was another : an unusual number, but the chapter revenues being large, there was a sufficiency for all.

At Lichfield again the bishop was a prebendary, residing on the estate, at Eccleshall, near Stafford ; and at Salisbury, the bishop held the prebend of Potterne, permanently annexed to the see. I am inclined to think that the bishops did not like their exclusion from a chapter, and

yet from the time when deans became the rule, at Exeter about 1223, they may not have seen their way to be present. In 1822 the House of Lords had to decide whether the Archdeacon of Dublin had a seat and voice in the chapter of Christ Church, as nominee of the Archbishop.

It must not however be supposed that the new system inaugurated by the Act of 1840, and the previous suspension in 1836 of appointments to sinecures, received ready acquiescence from the persons concerned. It is true that the bishops as a rule were not dissatisfied with a law which gave them an absolute right of selection for all canonries except those in the gift of the Crown : and some deans and dignitaries in the poorer cathedrals received improved emoluments ; but many questions arose which could not be decided at once with certainty. For instance, such as that of Canon Fleming at York in 1883 ; and that of the minor canons at Hereford, only a few years ago, one of which came before the High Court ; and the consequence was the appointment of two Commissions, one in 1851, and another in 1881 ; and by them a collection of documents and statistics was issued, far more than had been previously available for public information. It is from these I have gathered something like a general history as to the residence and privileges of canons or prebendaries, practically the names are synonymous, from the era of the Norman Conquest down to the present time. And, as may be expected in a paper designed for the attention and approval of the Devonshire Association, I shall devote myself principally to the Chapter of Exeter, as the capital of our large and important county, where it was my privilege to reside for so many years. It will be necessary however to include some details on the system generally prevailing through England, without some knowledge of which the usages prevailing here, we may say in 1831, will not be understood.

In England at that time there were two classes of chapters, called respectively those of the Old and those of the New Foundation. The second category were those founded by Henry VIII in the place of dissolved monasteries. They are Canterbury, Durham, Winchester, and about ten others, with six or more canons in each, all of whom in the seventeenth century had adopted the modern system of a dean sometimes, and a residentiary always present for divine service. These chapters I propose to leave

aside without further remark, as they do not well fall in line with the rules and customs, for example, of Exeter or Salisbury. On the other hand, York; St. Paul's, London; and six others are chapters of the Old Foundation. Exeter is one of them, and a short account of the transition, from the time of Leofric, 1050, to that of Henry Philpotts at his accession to the see in 1830 will enable my audience or my readers to see how "Time's effacing fingers swept the lines where beauty lingers." Twenty-four secular canons, obviously a number adopted from the New Testament, Revelation iv. 4, constituted Leofric's original chapter, only a few years before the Conquest. Probably it was his intention, that although only partially subject to religious life, they should nevertheless be generally present and share in divine service. The first innovation seems to have been the introduction by Bishop Brewer (1224-45) of a dean, obviously for the maintenance of order and regularity; and the most complete and authoritative code of statutes appears, according to the Report of 1853, to have been that of Bishop Bronescombe in 1268. But as Mr. Gibbon observes, "the spirit of a nation is stronger than a hundred statutes," and in the fourteenth century so relaxed was the rule of residence, that it became necessary for a canon to maintain himself for one whole year on his own means, including of course the income he obtained from his own prebend, before he could be allowed to share in the common fund, or *communa*, on which the officials and other residentiaries mainly relied for their maintenance. Bishop Brantingham (1370-95) introduced at Exeter a rule, not found in any other of the old foundations, by which all the revenues were merged in a common fund; these canons who had no right of residence receiving an inconsiderable remuneration, which in 1831 and for a long time previous had been £20 per annum, the four archdeacons, whose relation to the chapter proper seems uncertain, receiving each £45, and this is the most definite information I can obtain on the subject, as to how far residence, which originally had been an obligation, passed into a privilege, and that depending on the consent or election of the existing members of the lesser or active chapter. But how far a canon or prebendary's residence in a mediæval chapter depended on himself or others is, I should say, a very complex matter of detail, on which all the old chapters varied among themselves. My ideas on this subject were much enlarged by

reading a life of Bishop Smyth (of Lincoln), the founder of Brasenose College, Oxon., by Mr. Churton, one of their fellows. In it he describes a visitation of the dean and chapter held by the bishop in the year 1500, enquiring whether the prebendaries, sixty in number, were present, or if absent, on what cause. At Exeter a revision of the chapter statutes, including no doubt the question of residence, was made by Bishop Voysey in 1544, and by Bishop Alleigh in 1560, but I should doubt whether they had much practical effect in those troublous times.

From Phillimore's *Ecclesiastical Law*, Vol. I, p. 83, we learn that the archbishops of Canterbury held provincial visitations of the dioceses in their jurisdiction in 1560, 1576, and 1583, exactly as Archbishop Mepeham had endeavoured to do in 1331-2, when he was so successfully foiled by Bishop Grandison, as is recorded at length by Mr. Hingston Randolph, Preface to Part III, p. xxxiii; and it seems likely that at that period they enforced the system of residence or non-residence so clearly set out in the Canons of 1603-4, to which I have already referred. I admit that I have no direct authority for this opinion; but the affairs of the Church like those of the two universities were during that period in a very wavering and uncertain situation: and pressure, gentle or severe, may very well have been employed by the archbishops, backed by Lord Burghley and the Queen, to enforce a regular and methodical system of divine service in the cathedral churches of the realm. Ireland was in a different position, and Scotland not yet under the direct control of England: and beyond question a large proportion of the clergy, including among them many of the ablest and most intelligent, inclined to Puritan opinions, and had no great care for service agreeably to the rules and rubrics of the Prayer-book, as printed since 1559. They may have disliked the surplice, and the cope no doubt fell into disuse, but the long lessons from the entire Bible were in many ways congenial to their views, and many would think service twice instead of seven times a day a genuine improvement on the ways of their predecessors in title. On this view we can read intelligently the Canons of 1603-4, and think they represent the unbroken usage of some twenty or thirty years. *Coke upon Littleton* is the name of a work which those who have only a very cursory knowledge of English Law and History will allow is enough to prove that in those

times "possession was nine-tenths of the law," and that to be a dean or a prebendary duly installed was good security for an estate always certain, and sometimes valuable. No doubt the system of leases for lives left a canon rather poor for a time, but where the estate depended on three, one, perhaps the one least expected, might easily pass away; and all I have read induces me to think that very few endowments were actually lost. If a dean or a canon was not actually resident, he would have friends and colleagues who were there: and in very many there was certainly an earnest desire to do their duty by the Church as well as by themselves.

And by way of conclusion, we may consider the usage as to residence by the canons as observed in the seventeenth century, in the two adjacent chapters of Exeter and Salisbury. Seth Ward, who sat at Exeter 1662-7, and at Salisbury 1677-89, interested himself actively in this question. At Exeter he ordered that the non-resident prebendaries by a certain cycle should preach on Sundays in the afternoon. Whether this was done I cannot say. The rubrics do not require it, and at Salisbury he desired, in 1672, that a decree of Charles I and Archbishop Laud, of 1637, requiring two canons always to be in residence should be observed as far as practicable, a decree which Burnet in 1692 renews as a conscientious obligation. At Exeter it had been ordered in 1560 and 1582, that two canons should always be in residence: and in 1853, as there were then only six, the chapter allowed two substitutes £100 each to provide for the observance of the rule.

But was this rule observed previously to the stirring times of 1830-52? A spirit of suspicion engendered during an active life of unusual length seems to allow me to think that one canon in residence would often have been thought enough. Of course, as there were houses of residence for four at least of their number at either cathedral, two might naturally often be there. But "one touch of nature makes the whole world kin," and an anecdote from an old friend, whose father had a living near Devizes and a canonry at Salisbury, leads me to think that some of the residentiaries kept little more time than the three months indicated by the Act of 1840. "We had a powerful house dog, always chained up at home, and never at large or loose, except when my father drove across Salisbury Plain going to or from his residence at Salisbury, when he was

allowed to run by the side of the carriage." We may hope that he did not approach the young family of Hannah More's "Shepherd of Salisbury Plain" in too friendly and familiar a way.

At Exeter there should certainly have been two canons always in residence : so the chapter aver in their evidence in the Report of 1853, p. 184 : "The arrangement finally made by Bishop Blackall in 1712 provided that 'no canon should under ordinary circumstances reside less than three months in the year ; and that the Church should never be left without two residentiaries at the least residing at the same time.' " More I cannot say on a very complex question of evidence and history.

THE ORTHOPTERA OF DEVON.

BY C. W. BRACKEN, B.A., F.E.S.

(Read at Plymouth, 20th July, 1916.)

THE subject of this paper was included in Mr. Edward Parfitt's series of papers on the Fauna of Devon, read to the Association over thirty years ago. The part dealing with Euplexoptera, Orthoptera, and Homoptera appears in our *Transactions* for 1881. As many changes in nomenclature have occurred since then, and as a much more complete list of the Orthoptera can now be given, it seemed advisable to place these facts on record. I shall avoid repetition of Parfitt's statements or records, only referring to them, as a rule, for purposes of correction or completion. The Orthopterous or "straight-winged" insects include the Forficulodea (earwigs), the Blattodea (cockroaches), Gryllodea (crickets), Acridiodea (short-horned grasshoppers), and Locustodea (long-horned grasshoppers).

Devonshire is particularly rich in this group of insects, the majority of admitted British species having been taken in the county. As they are lovers of the sun and need a warm climate, they abound most in the south and south-west of England, as might be expected. Britain, however, is poorly represented as a whole, since we have only about 40 species out of 500 found in Europe.

The metamorphosis in this order is gradual. The eggs are deposited in capsules or cases (oöthecae), or in holes in the ground covered with a fluid which hardens on exposure to the air. When hatched, the insects have no wings; these develop as they increase in size, together with the callipers, setae, and other appendages.

SUB-ORDER—FORFICULODEA.

In this group the tegmina are short and apterous forms are numerous. The antennae are long; in *Labidura riparia*

and *Anisolabis annulipes* they have from ten to fifteen segments. The wings when folded project slightly, the segments of the abdomen are imbricated, giving mobility, power of extension, and resistance to external pressure. The popular belief that the insect has a propensity for entering the human ear finds expression in its name: English, earwig; French, *perce-oreille*; German, *ohrenwurm*. It certainly does, however, hide itself in crevices, and is of nocturnal habit, rarely being seen on the wing, though I have taken it making short flights over flowers in the evening. The different shape of the callipers in the two sexes, and in various species, is an important specific character and means of identification. They correspond to the cerci in the cockroaches and grasshoppers. As to their utility, they may occasionally be used for defence and offence, and possibly, also, to aid in "packing" the wings, the folding of which is a complicated process. The propensity of the female for guarding her eggs and young is well known.

Our commonest earwig is, of course, *Forficula auricularia*, Linn., which is found everywhere. It varies considerably in size and colour, some being nearly black instead of brown. The size of the callipers also varies, and this has tempted many naturalists to form new varieties. We need, I think, only retain the var. *forcipata*, in which the callipers are unusually long and flat at the base. Vars. *media* and *borealis* also mentioned by Parfitt are unnecessary. *Labia minor*, Linn. (the lesser earwig), is said to be abundant. In my own experience and that of some other naturalists, this is only true in the sense that when found *at all* it appears in numbers. It may be taken occasionally in heaps of well-decayed manure. In 1899, Mr. J. H. Keys, of Plymouth, found them flying over cut grass in a swarm at Beaumont Park, Plymouth. He has also sent me specimens taken in the town itself and at Yelverton, where he found them in numbers over manure, September, 1914. He has pointed out the interesting fact that it is sometimes found in company with the Staphylinid beetle, *Lithocaris ochracea*, Gr., to which it bears a strong general resemblance.

These are the only earwigs mentioned by Parfitt. An important species, however, now apparently extinct in the county, was formerly to be found at Tavistock. I refer to *Anisolabis annulipes*, Lucas. It was noticed by

Dr. Swale in 1894, this constituting the first English record. He took it in numbers among the ashes of a bakehouse in Market Street, which twenty years previously was occupied by a Mr. Williams. His daughter, who married a Jamaica merchant, Mr. Franklin, coming on a visit to her father, brought the nymphs of the earwig among her luggage. They bred in the bakehouse behind the dwelling, and formed a colony there. This is the explanation, I understand, of the "mystery," as some writers have termed it, of a Jamaican and South European insect being found in a quiet inland Devonshire market-town. It is to be found now in company with *Prolabia arachidis*, Yersin, a smaller and more delicate earwig, at Queenborough, Sheppey. They frequent old sacks in the chemical works, the former out of doors, the latter indoors. The only other earwig reported from Devon is *Forficula lesnei*, Finot, taken at Sidmouth by Mr. C. W. Dale. It is smaller than *auricularia* and has no wings. The giant earwig, *Labidura riparia*, Pallas, has not hitherto been found here, but since it can be taken near Bournemouth, there seems no reason why it should not appear sometime on our own south coast. Of the seven British indigenous or naturalized earwigs, therefore, we have in this county, records of four.

SUB-ORDER—BLATTODEA.

The typical member of this group is the common "black beetle"—an obvious misnomer. The general characteristics are the deflexed head, the long antennae of one hundred joints, the large pronotum almost concealing the head, and the very large coxae. The commonest cockroach in this county as in Britain generally, is *Blatta orientalis*, Linn., the common cockroach, a well-known household pest. It differs from *Periplaneta americana*, Linn., the ship cockroach, in its darker colour and the fact that its wings are short in the male and rudimentary in the female. In *americana* both sexes are winged. The eggs are laid in an oötheca carried in the body of the mother. When extruded, a process which takes twenty-four hours, it is carried for about a week and the young then hatch out. Gilbert White, writing before 1790, speaks of *orientalis* as "an unusual insect. How long they have abounded I cannot say. I have never observed them in my house till lately." Both species are common

in Plymouth houses to-day, though they are said not to live together in the same house, *orientalis* driving *americana* out. The *Victoria History of Devon* states: "About 12 years ago (i.e. 1894) Mr. G. C. Bignell observed a great number of these cockroaches in the streets of Plymouth, evidently flown from a ship then in the Great Western Docks. Since that time they have established themselves in several bakehouses in Plymouth." Mr. Bignell cannot, I think, have meant that this was the first date of their introduction here; they were well known in Plymouth for many years prior to that date. I recall seeing them in the early seventies myself. Another "house" cockroach, for which I have Plymouth records only, is the smaller *Blattella* (= *Phyllodromia*) *germanica*, Linn. It is fully winged and is reddish testaceous in colour. Mr. Keys has in his collection a card, on which are set a female with oötheca and forty young insects which emerged from it. It was obtained from a Plymouth restaurant in September, 1895. Fortunately, *germanica*, like *orientalis*, does not probably reproduce till about four years old. The three species of cockroach named so far, are not indigenous to Britain, but, though now thoroughly established, have been imported. Our indigenous, or "wild," cockroaches number three: *Ectobius lapponicus*, Linn., *panzeri*, Steph., and *perspicillaris* (= *lividus*), Fabr. Their length is about 6-9 mm., their elytra are fully developed, and they are of varying shades of straw-colour. They are found as a rule under rubbish, moss, and dried leaves. Parfitt records *lapponicus* from "vaults of City Bank, 1877." This is unlikely—it was probably *germanica*. This cockroach is not a "house" species, being invariably found among dead vegetation, though in Lapland it is probably the species that consumes the fish-stores of the natives. A more trustworthy record is one from Torquay, where it was taken at sugar, August 5-16, 1899. *Ectobius panzeri*, Steph. (Parfitt's *E. ericetorum*, Wesm.), quoted by him as taken at Kingsbridge, Exmouth, and Dawlish, was found in abundance "swarming over railway fence posts," at Churston, some years ago by Mr. G. T. Porritt. The colony appears to have been dispersed, as careful search two years ago on my part produced no result. Mr. Keys has often taken this cockroach on the top of the cliffs around Whitsand Bay, with its dark variety, *nigripes*, Steph. (quoted by Parfitt from Exmouth Warren). *Panzeri*.

is evidently a coast-loving insect, as Mr. Bignell took it at Wembury. Our third species, *Ectobius perspicillaris*, Herbst. (= *lividus*, Fabr.), is not in Parfitt's list. The *Victoria History* records it as found "in Devonshire" on the authority of Stephens. Any other cockroaches found in Britain must be included under the head of casual visitors. They are imported generally in fruit, such as bananas. Under this heading would come the fine example of the Madeiran cockroach, *Rhyparobia maderae*, Fabr., now in the museum of the Plymouth Institution. It is one of several taken in Plymouth streets, by Mr. Bignell, about 1886, probably flown from a ship then in the docks. I have another specimen of a casual found alive by a local tradesman last year in a bunch of bananas. It is probably a *Panchlora* of sorts, its colour being a beautiful and delicate green. Thus all the native and really established species of Blattidae found in Britain are natives of Devonshire, while we have records of casuals in common with other parts.

SUB-ORDER—GRYLLODEA.

The insects of this group are popularly known as crickets. The most familiar is the domestic cricket, the "cricket on the hearth," *Gryllus* (= *acheta*) *domesticus*, Linn. The question of the stridulation of crickets and grasshoppers generally was fully dealt with in Parfitt's paper, and I do not propose to cover the same ground. Although all his conclusions were not quite correct, they are in the main reliable, and the interested student can complete his information on the subject from any good modern text-book. It may be well here, however, to describe an organ which is present in the cricket as well as in the long-horned and short-horned grasshoppers. I refer to the so-called "ear." Essentially it consists of a membrane or tympanum supplied internally with a nerve and ganglion, in addition to muscles. It is of three forms—(a) the membrane surrounded by a rim; (b) the membrane depressed; (c) the depression strongly marked so that only a broad slit is seen externally. Unlike the stridulating organs which are practically confined to the males, these "ears" are found in both sexes. It is interesting to note that the forms in which the "ears" are absent are generally wingless and destitute of organs of vibration—on the other hand, there are species incapable of stridulation yet possessing these

ears.¹ Their exact function is so much a matter of doubt and speculation, that beyond making the general statement that they are probably auditory organs (and not, as formerly supposed, tympani for increasing the sound of stridulation), it is better to await the results of further experiment and investigation.

To return to the Gryllodea, these auditory organs are situated in the anterior tibiae just below the base. They may be present on both sides or one side only, and may be equal or unequal in size. Further characters of interest in the crickets are the wings, which, when fully developed, project beyond the elytra, and act as caudal tactile appendages, probably affording the same warning of danger to the cricket as the cerci of the cockroach to their owner.

Gryllus domesticus is becoming less and less common. It is no longer found as Parfitt describes it "in kitchens in almost every town." Its merry chirp, however, can still be heard in many a farmhouse and rural cottage, and we may still accept the *Victoria History* statement that it is "generally distributed."

Gryllus campestris, Linn., the field cricket, on the other hand, is an exceedingly rare insect. Possibly this is due to its subterranean habits. It burrows in the sand and retreats immediately on the sound of approaching footsteps. My readers will recall Gilbert White's interesting accounts of this, and the previously named insect, in his *Natural History of Selborne*, and the description of his method of capture by inserting a grass stem into their holes. This cricket is the French *gril*, *cricquet*, *cricri*, and *grillon champêtre*. Like *domesticus*, its wings are longer than its abdomen, but its colour is black. Parfitt and the *Victoria History* both give it as found in Devon on the authority of Stephens. I know of no other record. The wood cricket, *Nemobius sylvestris*, Fabr., is only found as far as I know in the neighbourhood of the New Forest. Parfitt's statement, however, that he found one specimen in a wood near St. Mary's Clyst, is worth repeating. This insect is wingless, and has abbreviated elytra.

The most curious and interesting insect of this sub-order is the mole cricket, *Gryllotalpa gryllotalpa*, Linn., which often exceeds two inches in length. Most noticeable are its fore legs. The trochanters are produced to a point, the femora and tibiae are dilated and compressed, while the

¹ Vide *Cambridge Nat. Hist.*, Vol. V., Part I, p. 285.

tarsi are flat and contiguous to the outer side of the tibiae, the first two joints being dilated to form stout teeth. A glance at the insect shows that these are valuable fossorial implements and indicates the accuracy of the popular name. The insect lives in holes in damp places, potato fields, and sandy ground. Its burrow is a winding passage at the end of which the female lays about a hundred eggs. It is local in this country, being found in the south chiefly. Parfitt reported it in 1882 as abundant near Exeter—it is doubtful if it still is, though, as with *campestris*, its subterranean habits no doubt protect it. I have no other record of its occurrence in Devon except that it was "seen" by Mr. Bignell. I may mention a record from Cornwall, perhaps, since it proves a point on which writers have been doubtful—the question whether *gryllotalpa* hibernates in the adult stage. A correspondent sent me on December 20th, 1912, a fully grown male taken on sandhills at St. Enodoc, near St. Minver, Newquay; this effectively settles the question. Summing up this section, all the species of *Gryllodea* found in Britain are recorded from this county.

SUB-ORDER—LOCUSTODEA.

Grasshoppers proper are included under the two suborders, *Locustodea* ("long-horned") and *Acridiodea* ("short-horned"). Locusts, however, in spite of their name, are classified with the latter, having short antennae. For the general observer it may be considered that any grasshopper with long antennae is uncommon, if not indeed a rarity. Seven of the nine British species are to be found in Devon; Parfitt reports five, but under names which would not be recognized, except by students of synonymy.

The largest insect of this group is the well-known great green grasshopper, *Phasgonura viridissima*, Linn., the French *sauterelle à coutelas*, *la cigale*, or *sauterelle verte*. The female, as always in the Locustodea, has a very long ovipositor. The body, alone, is from 32 to 35 mms. long; with the ovipositor it reaches 42 to 45 mms. The elytra are bright green, the right elytron in the male having a conspicuous, transparent, glistening, talc-like membrane, which, by its vibration, multiplies the effect of the stridulation caused by the friction of the elytral nervures. Its "chirp" is loud and harsh, and the insect seems almost to possess ventriloquial powers, so deceptive is the sound as

regards distance and locality. It has powerful biting jaws and can cause the indiscreet collector considerable pain. The "ears" or "tympani" are situated, as in all the members of this group, in the anterior tibiae, similarly to the crickets. It is fairly well distributed in Devon, but cannot be called common. I have taken it in abundance at Loddiswell and Woolacombe, and sparingly at Bovey. It is the largest but one of our British grasshoppers, *Tettigonia* (= *Decticus*) *verrucivora* is larger but is extremely rare. On the few occasions when I have seen *viridissima* in the sunshine using its wings to make a lengthy spring, one might be pardoned for mistaking it for an exotic species.

Two species of Locustodea are known commonly as bramble grasshoppers, *Leptophyes punctatissima*, Bosc., the green, and *Pholidoptera griseo-aptera*, De Geer (*Thamnotrizon cinereus*), the brown. Many writers refer to these as rather rare, but I have found them exceedingly abundant in various parts of the county, especially near Plymouth. Parfitt does not mention *punctatissima*, and speaks of *griseo-aptera* as a "rare insect." Both have rudimentary elytra and abortive wings. The first has long spider-like legs and a plump, bright green body spotted with little black dots. It is not very agile and is easily captured. *Griseo-aptera*, however, is very active and jumps strongly. I have taken numbers of the nymphs of both species by sweeping nettles in May and June and bred a few of them to maturity in an ordinary breeding-cage. Since both species are cannibal in habit, they should be kept in separate compartments. My neglect to do this resulted in breeding "the few" only! They will thrive on lettuce, but will also eat ash and rose in captivity. My own localities for *punctatissima* are Woolacombe and the Plymouth district. Here they abound in Cann Woods and at Newnham. Other records are from Torquay (at sugar), Cornworthy, and Lynmouth. It is thus well distributed. The other species, *griseo-aptera*, I have generally found in company with the first.

A very graceful and delicate Locustid is the pale-green tree grasshopper, *Meconema thalassinum*, De Geer (= *varium*). It is found only on trees and is best obtained by beating. So local is it, that one can collect specimens from the same tree year after year, but it cannot be called common. I have taken it near Plymouth sparingly in Cann and Shaugh Woods. According to most writers it is

found, as a rule, on lime and oak trees, but it is of interest to note that it abounds in a garden at Saltash, on bay trees only, no lime or oak being near.

A very rare Locustid in Devon, and local in Britain generally, is *Metrioptera albopunctata*, Goeze (= *Platypleis grisea*, Fabr.). It is a large, long-legged insect, brown and slightly tinged with red. The elytra are spotted, and, with the wings, are fully developed. Parfitt merely records it on the authority of Stephens, not apparently having taken it. He seems, however, to have had the good fortune to take *Metrioptera brachyptera*, Linn., a much rarer insect, at Haldon and Woodbury. As the name denotes, its elytra and wings are abbreviated. I have taken *albopunctata* at Braunton Burrows, my only record for Devon, though I have a specimen captured at Whitsands, near Plymouth. The Braunton specimen, taken on the sand-dunes, is quite pale in colour, the other from cliff slopes is dark.

The last of this sub-order to be named as a Devonshire insect is also very rare, *Conocephalus dorsalis*, Latr. (= *Xiphidium dorsale*), which may be termed the marsh grasshopper. The only published record is in the *Victoria History*—"In a marsh, S. Devon, Porritt." Mr. G. T. Porritt, who found several near Churston in 1900 and 1902, kindly informed me in 1912 of the precise place where one might expect to find them. A search on August 26th, 1914, was rewarded by the capture of three specimens, two females and one male, in the exact spot indicated. Several hours' sweeping in other areas produced no result, a striking illustration of the way in which certain insects continue to breed for years in a limited area. This grasshopper is about 14 mm. long, its elytra are hyaline and shorter slightly than the abdomen. The wings are abortive. In colour it is a pale oily green with a crimson-brown streak along the dorsal surface. As in the bramble and tree grasshoppers, the ovipositor is scythe-shaped. The insect presents a graceful and pretty appearance when in its favourite haunts sunning itself on rushes or leaves of iris, its long antennae gently waving like threads of spun glass. I have been fortunate enough, quite recently, to discover another habitat. Sweeping clumps of yellow iris on the banks of the R. Tavy near Bere Alston on June 17th this year, produced one specimen in the nymph stage. The insect, which I failed to rear, has the characteristically produced vertex, but the pronotum, elytra, and wings are

not yet developed. The oily-green colour of the adult stage is evident, and the dorsal reddish-brown stripe is very marked. Careful and thorough sweeping of marshy ground would no doubt discover other breeding places.

SUB-ORDER—ACRIDIOIDEA.

This is the last group with which we have to deal. Unlike the Gryllodea and Locustodea the "ears" in these short-horned grasshoppers are situated on each side of the first segment of the abdomen, the aperture being more or less closed.

The nomenclature of Parfitt's day is quite superseded, some of his species being now treated as mere varieties and some being duplicates of each other.

Since the six "field" grasshoppers of this group closely resemble each other, they have been placed till recent years in one genus, though on the Continent they were regarded as members of four different genera. Parfitt included them all under *Rhammatocerus*; later, and especially popular writers, named them all *Stenobothrus*.

The following attempt to give the present equivalents of the species of Parfitt's genus *Rhammatocerus* may be useful to students:—

R. lineatus=*Stenobothrus lineatus*.

R. haemorrhoidalis=a form of *Stauroderus bicolor*.

R. viridulus=*Omocestus viridulus*.

R. biguttulus=a form of *Stauroderus bicolor* (the real *biguttulus* is a Continental insect).

R. biguttulus, var. *bicolor*=*Stauroderus bicolor*.

R. rhomboideus=*Stauroderus bicolor*.

R. mollis=the green var. of *bicolor*.

R. parallela=*Chorthippus parallelus*.

Stauroderus bicolor, Charp., is the commonest of all our grasshoppers and is found almost everywhere. Its colour varies considerably, which accounts for the attempts to divide it into sub-species and varieties. Three varieties are recognized now: *purpurascens*, Fieb., rosy in colour; *mollis*, Charp., green; *nigrina*, Fieb., dark. The determining characteristics in this genus are the lateral ridges of the pronotum and the mediastinal area of the elytra. In *bicolor*, the former is sharply angled and the latter dilated at the base. In all this sub-order, stridulation is effected

by rubbing the inner surface of the hind femur against the outer edge of the elytron.

Found in company with *bicolor*, though not quite so commonly in Devonshire, is *Omocestus viridulus*, Linn. It is fairly large and has the elytra, pronotum ridges, and parts of the legs, green. *Omocestus rufipes*, Zett., is not so common. It is known by the very white tips of its palpi. It has been taken at Churston by Porritt, at Lynton by Briggs, and on the "Devon coast" by Bignell. Parfitt does not mention it.

Stenobothrus lineatus, Panz., is a rarity. Its distinguishing marks are a rosy line at the edge of the pronotum and a white crescent on the elytra. Parfitt took it at Braunton, Bignell at Wembury. Two species of *Chorthippus* occur in England: *elegans*, Charp., and *parallelus*, Zett. The former has not been taken in Devon, but *parallelus*, like *bicolor*, is found everywhere. It may be known by the parallel ridges of the pronotum, and its short elytra. These, in the male, do not quite reach the end of the abdomen; in the female they only reach the fourth segment. It is generally green, but varies much in colour.

We have two species in Britain of *Gomphocerus*, the knobbed-horn grasshopper; both occur in Devon. As the name indicates, the antennae are clubbed at the end, especially in the male. *Gomphocerus rufus*, Linn., is rare, though Parfitt says he found it common at "Exmouth and Dawlish." There are very few British records. The tips of the antennae are white in the male. Bignell records it from Wembury and Bolt Head.

Gomphocerus maculatus, Thunb., is commoner. Its favourite habitat is heathy slopes near the sea and on the edges of woods, but I have found it very local. It varies greatly in colour. I have taken specimens at Lee Woods, Woolacombe, and at Ugborough Beacon. Those found near the sea were very pale, the moorland specimens were dark and almost black.

A very interesting genus is *Tetrix*, the smallest British grasshopper. We have two species: *bipunctatus*, Linn., and *subulatus*, Linn. Examined under a lens the rugosities of the pronotum give it the appearance of some exotic insect. *Bipunctatus* is perhaps more variable in colour than any other grasshopper; it ranges from a creamy white to black, and generally has two dark spots on the pronotum, whence its name. The length of the pronotum is its dis-

tinguishing and most curious feature. In *bipunctatus* it is lengthened almost to cover the abdomen, while in *subulatus* it extends beyond it. The former insect can be taken almost all the year round since it hibernates in the imago stage. It can generally be taken by sweeping, among the short grass in the clearings of woods and on moorland and hillside slopes. Parfitt admits, unnecessarily, two varieties. He speaks of *subulatus* as generally distributed; it is certainly not so to-day. While *bipunctatus* is quite common, *subulatus* is rarely taken. I have only found it in abundance at Bude, which is outside our purview. An isolated specimen occurred while sweeping at Braunton Burrows; Bignell records it from Bickleigh.

It only remains now to deal with two, or perhaps three, casual visitors. Parfitt records the capture in 1857 of *Pachytylus migratorius* on Dawlish Warren. Flights of these locusts are said to have occurred fairly often, but they are more likely to have been confused with *P. danicus* (= *cinerascens*), since the former is a native of Eastern Europe, while *danicus* is a resident of France. *Migratorius* has perhaps been occasionally taken in England, but has probably been generally confused with *danicus*. The 1857 flight was almost certainly the latter. Individuals of an 1846 flight were also taken in this county. The insect is large, measuring 37 mm. in the female. Its colour is greyish green. In 1869 the locust *Schistocerca peregrina*, Oliv., visited England in considerable numbers. The insect is yellow with fuscous markings, and measures 57 mm. in the female. It is the *criquet pèlerin* of the French. Its native place is North Africa, where it is found as far south as Algeria and the Red Sea. A flight northward, from North Africa, was apparently caught by a south-easterly wind, and driven on our south-western coast. Records of capture were made in the counties of Cornwall, Devon, Worcester, Warwick, Derby, Stafford, Nottingham, and finally in York, where the last stragglers perished. On October 9th, 1869, about thirty were taken in and near Plymouth. Mr. Bignell secured a dozen, one of which is in the Museum of Plymouth Institution. Some were taken in North Devon.

It will be seen therefore that our county possesses representatives of most British species of the Orthoptera, and that considerable advance in knowledge has been made since the last paper on the subject was read to the Association.

DETAILED RECORDS.

(The nomenclature adopted is that in use by the most modern workers and authors, and follows the priority rule. Where Parfitt's names differ they are given, and marked with an asterisk.)

Order, ORTHOPTERA.

Sub-order, FORFICULODEA.

Genus, LABIA, *Leach*.

- Minor*, Linn. . . Yelverton, September, 1914,
Beaumont Park, Plymouth, 1899
(J.H.K.) ; Lynmouth (C.A.B.) ;
generally distributed (P.).

Genus, FORFICULA, *Linn.*

- Auricularia*, Linn. . Includes vars. *media* and *borealis*
of Parfitt ; generally distributed (C.W.B.).
„ var. *forcipata*, Steph. Generally distributed (P.).
Lesnei, Finot . . Sidmouth (C.W.D.).

Genus, ANISOLABIS, *Fieber*.

- Annulipes*, Lucas . Tavistock, June, 1894 (Dr. Swale),
in coll. (J.H.K. ; W.J.L.).

Sub-order, BLATTODEA.

Genus, ECTOBIUS, *Westwood*.

- Laponnica*, Linn. . Exeter, June, 1877 (P.) ; Tor-
quay, August 16th, 1899 (H.).
Panzeri, Steph. . Kingsbridge, Plymouth, Ex-
(=*Ericetorum*, mouth, Dawlish, 1867 (P.) ;
Wesm.*) Churston (G.T.P.) ; Wembury
(G.C.B.).
„ var. *nigripes*, Steph. Exmouth, 1877 (P.).
Perspicillaris, Herbst. . “ Devonshire ” (Stephens).
(=*lividus*, Fabr.*)

Genus, BLATTELLA, *Caudell* (=PHYLLODROMIA, *Serv.*).

- Germanica*, Linn. . Plymouth, 1895 (G.C.B. ; J.H.K.)

Genus, BLATTA, *Linn.* (=PERIPLANETA, *Burm.**).

- Orientalis*, Linn. . Generally distributed (C.W.B.).

Genus, *PERIPLANETA*, *Burm.*

Americana, Linn. . Generally distributed in Plymouth at least (C.W.B.).

Genus, *RHYPAROBIA* (= *PANCHLORA*, *Burm.**).

Maderae, Fabr. . Plymouth, 1886 (G.C.B.); casual visitor.

Sub-order, GRYLLODEA.

Genus, *GRYLLOTALPA*, Latr.

Gryllotalpa, Linn.. . Exeter (P.).

Genus, *GRYLLUS*, *Linn.*

Domesticus, Linn. . Generally distributed (P.; C.W.B.).

Campestris, Linn. . "Devonshire" (Stephens).

Genus, *NEMOBIUS*, *Serv.*

Sylvestris, Fabr. . Sandygate, St. Mary's Clyst (P.).

Sub-order, LOCUSTODEA.

Genus, *LEPTOPHYES*, *Fieber.*

Punctatissima, Bosc. . Woolacombe, August, 1911; Lower Plym Valley commonly (C.W.B.); Churston, September, 1900 (G.T.P.); Torquay, at sugar, August 16th, 1899 (H.).

Genus, *MECONEMA*, *Serv.*

Thalassinum, De Geer . Shaugh Woods, September 19th, (= *varium*, Fabr.*) 1912; Cann Woods, September 7th, 1913; Bampford Speke, September, 1910 (C.W.B.); Churston, 1900 (G.T.P.).

Genus, *CONOCEPHALUS*, *Thun.* (= *XIPHIDIUM*, *Serv.**).

Dorsalis, Latr. . Churston, September 11th, 1900, and 1902 (G.T.P.); also (C.W.B.) August 26th, 1914; nymph, Bere Alston, June 17th, 1916 (C.W.B.).

Genus, *PHASGONURA*, *Westwood.*

Viridissima, Linn. . Newton, Teignmouth, Saunton (P.); Loddiswell, Woolacombe, Bovey (C.W.B.); Churston (G.T.P.); Beer (Lyle); Torquay (H.); near Plymouth (G.C.B.).

Genus, PHOLIDOPTERA (=THAMNOTRIZON, *Fisch.*
=MICROPTERYX, *Stephens**).

Griseo-aptera, De Geer . Lower Plym Valley, commonly,
(=*cinereus*, Gmel.= Bovey, August, 1906, Woola-
aptera, Fabr.*) combe, August, 1912 (C.W.B.) ;
Torquay (H.) ; Churston
(G.T.P.) ; Ivybridge (G.C.B.).

Genus, METRIOPTERA (=PLATYCLEIS, *Fisch.**).

Albopunctata, Goeze . Braunton Burrows, August 24th,
(=*grisea*, Fabr.*) 1912 (C.W.B.) ; Torquay, at
sugar, August 16th, 1899 (H.) ;
Dawlish, 1829 (Babington *teste*
Stephens).

Brachyptera, Linn. . Haldon and Woodbury Commons
(P.).

Sub-order, ACRIDIODEA.

Genus, GOMPHOCERUS, *Thun.*

Maculatus, Thun. . Haldon, Woodbury, Blackdown
(=*biguttatus*, Charp.*) (P.) ; Lee Woods (Woola-
combe), Ugborough Beacon,
August, 1914 (C.W.B.).

Rufus, Linn. . Exmouth, Dawlish (P.) ; Wem-
bury, Bolt Head (G.C.B.).

[NOTE.—The next four genera are all included by Parfitt
under RHAMMATOCERUS, *Fisch.*, and by later writers under
STENOBOTHRUS, *Fisch.*]

Genus, STENOBOTHRUS, *Fisch.*

Lineatus, Panz. . Braunton Burrows (P.) ; Wem-
bury (G.C.B.).

Genus, OMOCESTUS, *Bolivar.*

Viridulus, Linn. . Cosdon Beacon (C.W.B.).

Rufipes, Zett. . Churston (G.T.P.) ; "on coast"
(G.C.B.) ; Lynton (C.A.B.) ;
Woolacombe, 1912 (C.W.B.).

Genus, STAUDODERUS, *Bolivar.*

Bicolor, Charp. . Generally distributed with vars.
(=*biguttulus*, etc., of *purpurascens*, *mollis* and *nigrina*
Parfitt, *vide supra*) (P. ; C.W.B.).

Genus, CHORTHIPPUS, *Fieb.*

Parallelus, Zett. . . Generally distributed (C.W.B.).

Genus, PACHYTYLUS, *Fieber.*

Danicus, Linn. . . Dawlish, 1857 (P.); "casually
(=*cinerascens*, Fabr.= in Devon" (*Vict. Hist.*).

migratorius, Linn. *)

Migratorius, Linn. . "Casually in Devon" (*Vict. Hist.*).

Genus, SCHISTOCERCA, *Stål.*

Peregrina, Oliv. . . Plymouth, October 9th, 1869
(G.C.B.); North Devon (*teste*
P.); casual visitor.

Genus, TETRIX, *Charp.*

Bipunctatus, Linn. . Generally distributed (C.W.B.).

Subulatus, Linn. . Braunton Burrows, August 22nd,
1912 (C.W.B.); Bickleigh,
April 22nd, 1891 (G.C.B.);
generally distributed (P.).

G.C.B.	G. C. Bignell.	H.	A. H. Hamm.
C.A.B.	C. A. Briggs.	P.	E. Parfitt.
C.W.B.	C. W. Bracken.	G.T.P.	G. T. Porritt.
C.W.D.	C. W. Dale.	W.J.L.	W. J. Lucas.

[AUTHORITIES.—In addition to the ordinary entomological text-books and periodicals, the writer is indebted to Dr. Malcolm Burr's *British Orthoptera*, and Synopsis of the *Orthoptera of Western Europe*; also to the volume *Insecta*, Pt. I., of the *Cambridge Natural History*. Use has been made of the records given in the *Victorian History of Devonshire*, and of papers by Mr. W. J. Lucas, B.A., F.E.S., an editor of the *Entomologist*, whose letters and kind advice have also been most helpful.]

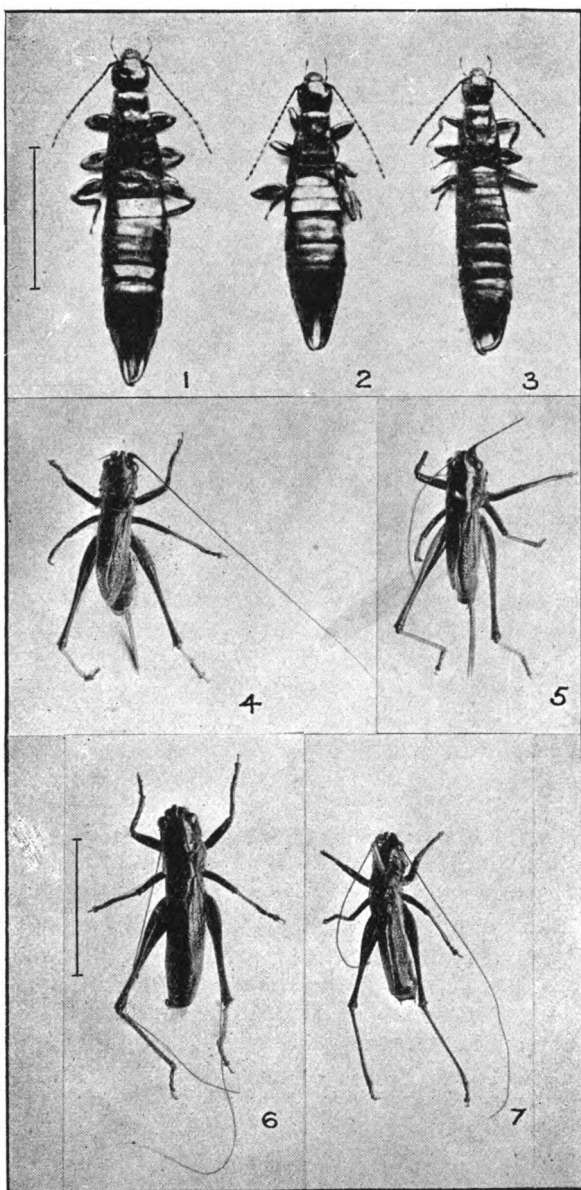
EXPLANATION OF PLATE.

FIGS. 1, 2.—*Anisolabis annulipes* Lucas, ♀.

FIG. 3.—*Ditto*, ♂.

FIGS. 4, 5.—*Conocephalus dorsalis*, Latr. (= *Xiphidium dorsale*, Serv.), ♀.

FIGS. 6, 7.—*Ditto*, ♂.



Photo, R. H. Worth.

THE ORTHOPTERA OF DEVON.—*To face p. 282.*

TWELVE MONTHS' NOTES ON THE BIRDS OF THE SOUTH HAMS DISTRICT.

BY E. A. S. ELLIOT, M.R.C.S., M.B.O.U.

(Read at Plymouth, 20th July, 1916.)

EARLY in February of this year a great spotted woodpecker was sent me, shot in a big wood in the neighbourhood, the sportsman, who was waiting for pigeons, thinking it was an escaped parrot and that shooting it was the best way of restoring it to its owner. Finding after all it was not a parrot, it was sent me for identification. In the New World, there are very many species of spotted woodpeckers, and the spots on the dorsal plumage are so thick as to almost coalesce and form lines, which has caused the birds in the vernacular to be called ladder backs.

By Pliny and other old-time writers we are told this bird was used in augury because he was believed to be the son of Saturn, grandfather of Latinus, king of the aborigines and a prophet; he was changed by Circe, whose love he had slighted, into a woodpecker.

All woodpeckers bore a hole in the stump of a hollow tree in which to lay their six to eight beautiful glossy white eggs, and the hole thus made by the bird's bill will be found absolutely circular with mathematical precision. One species bores holes, say, in a pine tree, and fixes acorns in them, it is supposed, for food or for the grub that is sometimes found in the acorn; but the birds migrate and after journeying thousands of miles, come back and seemingly neglect their store; anyhow they follow their instinct so blindly that they do not distinguish between an acorn and a pebble, so that they fill up the holes they have drilled with so much labour, not only with acorns but occasionally with stones.

The first harbinger of spring this year was a chiff-chaff, and I find the following note. March 10th. Watched a chiff-chaff feeding on insects found in the moss on top of the

wall outside the greenhouse. Wind E., strong and cold, and *snow still lying about*. How one pities such a mite coming from the vineyards of Southern Europe to such a desolate garden.

A spoonbill (*Platalea*—probably from $\pi\lambda\alpha\tau\upsilon\varsigma$ =broad—*leucorodia*— $\lambda\epsilon\upsilon\kappa\omicron\varsigma$ =white, $\rho\omega\delta\iota\omicron\varsigma$ =heron) frequented the estuary during the spring months, consorting with the herons and roosting with them in Halwell Wood. It was lost sight of early in April, and I do not think it was shot; at any rate it did not pass through the hands of the local taxidermist. Possibly this was the same bird seen by a lady from the train on the River Teign early in the month of January. To show how utterly ignorant some writers were even in Montagu's day, whose knowledge, by the way, was far in advance of his contemporaries, I quote from Goldsmith's *Animated Nature* :—

“A bird so oddly fashioned might be expected to possess some very peculiar appetites; but the spoonbill seems to lead a life entirely resembling all those of the crane kind; and nature, when she made the bill of this bird so very broad, seems rather to have sported with its form, than to aim at any final cause for which to adapt it. In fact, it is but a poor philosophy to ascribe every capricious variety in nature to some salutary purpose: in such solutions we only impose upon each other, and often wilfully contradict our own belief. There must be imperfections in every being, as well as capacities of enjoyment. Between both, the animal leads a life of moderate felicity; in part making use of its many natural advantages, and in part necessarily conforming to the imperfection of its figure.”

What a conceit, “to believe Nature could ever perpetuate a deformity.” As a matter of fact, unlike the majority of waders, this species is a surface-feeding bird, its long legs enabling it to go far out and obtain the small fish, frogs, mollusca, and insects, keeping its bill immersed and rapidly sweeping the pools with a semicircular movement.

Later in the same month a little owl (*Athene noctua*) was brought me for identification; it was shot near some corn ricks, evidently there for the purpose of catching rats, and was mistaken by the gunner for a woodcock. Shades of Gilbert White, fancy a woodcock near a corn stack!

The accidental occurrence of this Southern species on our shores at this stage of Europe's general upheaval is of

more than passing interest, though one is taught in these enlightened days—save the mark—not to believe in superstition or portents of any kind whatever.

“Thou ominous and fearful Owl of death,
Our Nation’s terror, and their bloody scourge !
The period of thy tyranny approacheth,
On us thou canst not enter but by death :
For I protest, we are well fortified,
And strong enough to issue out and fight . . .
Shall see thee withered, bloody, pale, and dead.”
King Henry VI.

“Nor that the treble songsters of the day,
Are quite estranged, sad bird of night, from thee ;
Nor that the thrush deserts the evening spray,
When darkness calls thee from thy reverie.”
Gray.

Be that as it may, this species was dedicated to Pallas Athene (Goddess of Wisdom) and was chosen by the capital of Greece as that city’s emblem, and was emblazoned on all her coins, the city, mind you, in old times when Science and Art were so welcome ; but those who know the grotesque actions and ludicrous expression of this veritable buffoon of birds can never cease to wonder at its having been seriously selected as the symbol of learning, and can hardly divest themselves of a suspicion that the choice must have been made in the spirit of sarcasm.

At the very end of March of this year a short-eared owl was shot in Charleton Cliffs, and indicates, I think, a desire to remain, and to have bred. Usually one only sees these birds in the autumn about the time woodcock arrives on our shores, whence they are known as the woodcock owl. Should a plague of field voles occur, these birds appear in hundreds, and it is estimated that when such a plague took place in the south-west of Scotland some five-and-twenty years ago, hundreds of these birds came to the rescue, estimated, indeed, at four hundred pairs, and not only cleared the land of mice, but increased their own race to an abnormal extent by laying a clutch of twelve or more eggs, whereas the ordinary set is from six to eight eggs. They make their nest on the ground amongst the heather. This species is one of the most widely distributed of all birds, being nearly cosmopolitan in habit ; those I have, however, from the Rocky Mountains are very much paler in colour than the ordinary

form, and are, in my opinion, worthy of sub-specific rank. The insane slaughter of many of these birds which were put up in a turnip field one autumn day some years ago, has been recorded in a previous paper.

I have this note on another species of owl, the wood or tawny owl. October 9th, 1915. A curious and painful incident is worth recording. Noticing at lunch-time something apparently hanging on to the rails under the belt of trees by the middle gate, the wife went over and came back with the report that an owl had got caught by the wing in the wire fence. I went over and released the poor thing, but had to use the knife: I fear the bird is too far gone to make a recovery. It was pitiful to note the bird's distress and its evident relief at being at any rate released from its inextricable position. October 10th. Bird dead. I noticed two or three dead mice close to the bird, but they were untouched: they had apparently been brought by the mate.

Owls are not only dimorphic in plumage—you get a red phase and a grey phase even in our own common wood owl—but are subject to assume a plumage in consonance with their environment. Take, for example, the great horned owls of North America, we get no less than four forms, differentiated almost entirely by their depth of colour.

The very darkest are found in the deep forests of Labrador, whilst the lightest, almost as white as the snowy owl, are found in the Rocky Mountain region, especially in Colorado, and these specimens bulk smaller than their congeners.

We find here a singular effect of environment not singular in the sense of alone, for there are many such cases in the Avian kingdom, but singular as showing how Nature adapts her creatures to circumstances. The normal colouration of owls is brown or tawny with modifications from flame colour to deep brown, but here you get a violent contrast from the very deepest brown, found in the great timber belt of the Western States, to an almost white plumage, the birds of the same species, you must bear in mind, being quite as white as a snowy owl from the treeless region of the Arctic circle.

The diurnal birds of prey are also subject to dimorphism; curiously enough in our common sparrow-hawk you get a red phase and a grey, but in the majority of instances the

contrasts are black and white, thus it is not surprising when a melanistic form comes to hand as a common buzzard did from Bigbury this spring, which was very dark indeed. There is only one country in the world where a true black falcon and a white are found and that is that land of anomalies, Australia, where we get the black falcon and the white goshawk.

I have some rather interesting notes concerning those Northern migrants to us, the fieldfares and redwings.

In February with snow on the ground extraordinary numbers visited us, and again on March 3rd, 1916. Great numbers of redwings and fieldfares around house now the snow has somewhat disappeared : wild as hawks. March 4th. All gone.

April 5th. Fair sized flock in top field, very mild. N., showery. Birds still with us April 7th, but very wild. Evidently migrating, as not one was to be seen in the afternoon.

April 16th. Birds were back in fields yesterday and I could have secured specimens I think, but being the Sabbath could not do so.

No birds to be seen this morning. Verily a collector has many disappointments, as the birds were in splendid plumage.

The fieldfare is a late breeder ; none of my sets of eggs from the Continent, even from Finland, being earlier than the first week in June. The species, it should be noted, is a winter visitor only and does not breed in Great Britain. It is rather interesting to note that the eggs of the fieldfare approach the type of our mistletoe thrush, whilst the redwing's egg is more like our blackbird. Much confusion and doubt has been caused as to why the specific name *pilaris* was translated and given by Gaza in 1476 to this bird.

The note in the Ibis list of the nomenclature of British birds sheds but little light on the subject, but it seems to me the old-time naturalist meant to suggest that the bird was *felt* covered, i.e. *pilaris* from *pilus*=a hair : such a felt cap being used by the Roman soldiers to ease the pressure of their iron helmets ; in fact it is a question whether the name field is not here a corruption of *felt*.

There is no manner of doubt as to the vernacular name as it is the Anglo-Saxon *Feals*—for=Fallow—farer, from which to fieldfare is an easy stage.

The redwing is a beautiful songster and is known as the Swedish nightingale ; its song is seldom heard in this country as the bird leaves us early in April, but sometimes a small flock is tempted to remain in the vernal sunshine, and to hear them singing in chorus at the top of the tall elms is a revelation in bird-song. In the United States these thrushes are represented by the mocking-bird and the thrashers, of which Dr. Elliot Co^ues writes: "They are all melodious, and some like the immortal mocking-bird, are as famous for their powers of mimicry as for the brilliant execution of their proper songs. In compensation for this great gift of music, perhaps that they may not grow too proud, they are plainly clad, greys and browns being the prevailing colours."

The swallows returned to their old nesting haunts on the beams of the museum about the middle of April, and a notable increase was apparent, rendering fresh nesting sites necessary which were taken advantage of on the rafters of an outhouse. I am sorry to say a tragedy happened to one pair, the only pair that built a fresh nest in the museum. The window was half open and the female in some way slipped between the two sashes ; she was dead when I discovered the mishap, and the male bird, who evidently had gone to the rescue, nearly so : but I freed him and he recovered, and I believe found another partner.

I have run on to some queer conceits concerning the bird which may be worth while quoting.

"The swallow is of a black colour, with some spots of a dirty black under her belly ; its flight is very unequal, and its sight is very quick. It appears in spring and summer and goes away in autumn. It is thought that it passes the sea, and withdraws into hotter climates, when it either hides itself in holes in the earth or even in marshes and under the water, wherein sometimes great lumps of swallows have been fished up, fixed one to another by the claws and beak ; and when they are laid in a warm place, they move and recover, though before they seemed to be dead. It is called *Chelidon* in Greek, whence comes the name of the herb chelidon, in English celandine or swallow-wort, because it is pretended that with this herb the swallow opens the eyes of her young ones, though they should be blinded on purpose. It is said that the flesh of these birds burnt to ashes is excellent for distempers

of the eyes. The swallow is said to breed twice a year, once in the climate to which she transports herself while our winter lasts, and again in those six months she continues in this country (as a matter of fact they breed three times, below the equator, on the shores of the Mediterranean Sea, and lastly in northern latitudes E.E.). Their nests are made of clay, and it is said that when they want clay or mud they plunge themselves in water, then rolling in the dust make clay for themselves.

We heard a corncrake or landrail at a very early date this year, namely, April 10th. They are always very shy and have ventriloquial powers second to no other species : often when you seem quite close to the bird, with its *crake, crake, crake*, it flits over the far hedge well out of shot. The poet Burns refers to this clamouring—

“Mourn, clam’ring craiks, at close o’ day
 ‘Mang fields o’ flowering clover gay,
 And when ye wing your annual way,
 Frae our cauld shores
 Tell thae far warlds whoa lies in clay,
 Wham we deplore.”

I have never tried the dodge stated to be successful by a well-known author and observer, of imitating their cry on a toothed-comb, and after a few moments found them running between our legs.

All I can say, they are a most succulent morsel dressed in vine leaves.

Some remarkable bags of this bird have been recorded as obtained in the autumn, in Malborough parish especially, in years gone by, the sportsmen having to go home and wash out their guns, which became clogged with the debris of the black powder ; it was in the old days of muzzle-loaders and flints ; but since the advent of mowing machines and consequent destruction of nests and eggs the bird has become very scarce.

Since writing the above, a friend has come to me to ask my advice as to what he should do, as living as he does on the outskirts of the town and having grass land outside his windows, a corncrake has taken up his quarters there making night hideous with his incessant *crake, crake*, and rendering sleep impossible or even allowing an open window this hot weather. I suggested the tooth-comb business and a big stick, but my advice was, I am sorry to say, treated with contumely.

SOUTHCOTT OF DULCISHAYES, KILMINGTON.

**AN EXTENSION OF THE PEDIGREE AS GIVEN
BY VIVIAN, PAGE 698.**

COMPILED BY A. J. P. SKINNER.

(Read at Plymouth, 20th July, 1916.)

THOMAS SOUTHCOTT, of Calverly or Calwoodleigh, died 22 Aug., 1622; by his first wife, Mary, daughter of John Croker, of Lyneham, had a second son:—

George Southcott, of Dulcishayes; will dated 6 Jan., 1648, proved 31 Oct., 1649, P.C.C. (150, Fairfax); married Joan,¹ daughter and heiress of Barnard² Fry, of Dowleshayes. His will was proved 1633, in the Principal Registry of the Bishop of Exeter; but is now missing. George and Joan Southcott had issue:—

I. John Southcott.

II. Thomas Southcott, of whom later.

III. Henry Southcott, of Whittle, Co. Essex. Will dated 12 Feb., 1680, proved 17 June, 1683. P.C.C. (76, Drax). "To be buried in the parish church of Whittle."

IV. Barnard Southcott, died unmarried 1655.

V. Joan, married — Ivey.

VI. Mary, died 19 Oct., 1657, buried in Farringdon Church, M.I.; married Samuel Taner, of Crealey, son and heir of George Taner, of Crealey, and his wife Edith, daughter of Richard Duck. Born 1613, died 24 Dec., 1688, buried in Farringdon Church, M.I. Amongst other issue, they had:—

(a) Samuel Taner, heir, of Wadham College, Oxford, matriculated 19 May, 1670, aged eighteen; died 9 Nov., 1714, aged 63; buried in Farringdon

¹ *Vivian* gives her name as *Mary*, the monument in Kilmington Church states *Joan*.

² Barnard Fry had a son, John, born 19 May, 1595, baptized at Kilmington, 24 May. He was of Exeter College, Oxford, and student of the Middle Temple, 1613.

Church, M.I. He married Isabella Corsellis, of Powderham, marriage licence, Exeter, 14 Dec., 1677.

- (b) Edith, died 6 Nov., 1736; buried 9 Nov. Branscombe Church, M.I. She married (marriage licence, 1 Feb., 1675) Ellis Bartlett, of Hole, Branscombe, 1645–1711; son of Ellis Bartlett, of Hole, and his wife, Mary, daughter of Edmund Walrond, of Bovey.

Thomas Southcott (second son of George and Joan), of Dulcishayes. Will dated 30 June, 1659; proved 8 March, 1663. P.C.C. (32, Bruce). He married Mary, daughter of Thomas Shapcott, and his wife Urith, marriage licence, 29 Aug., married 30 Aug., 1640, at All Hallows', Goldsmith Street, Exeter. They had issue:—

- I. Thomas, died young.
- II. George Southcott, of Dulcis, matriculated at Oriel College, Oxford, 19 July, 1659; a student of Lincoln's Inn, 1659. Will dated 10 March, 1697; proved 11 July, 1698, P.C.C. (174, Lort). He married and had two daughters—Elizabeth and Joan, both died 1674, buried Kilmington Church, M.I.
- III. Thomas Southcott, of whom later.
- IV. Henry Southcott, matriculated at Exeter College, Oxford, 7 May, 1675, aged eighteen; B.A. 1678, M.A. 1681, B. Med. 1684, M.D. 1700. Buried at Offwell 26 April, 1706. Will dated 1 April; proved 8 Nov., 1706, P.C.C. (245, Eedes). He married at Offwell 3 July, 1694, Dorothea, daughter of William and Ann Collyns, of Colwell; baptized at Offwell 4 Oct., 1653; died 16 Sept. and buried at Offwell 22 Sept., 1698. M.I.
- V. Elizabeth, died young.
- VI. Joan.
- VII. Dorothy, died 27 Aug., 1677; buried 28th, St. Mary Arches, Exeter, M.I. She married (marriage licence, 15 Aug., 1676) James Walker, Hon. Colonel, Governor of Port Royal, Jamaica; Mayor of Exeter 1684. Son of Robert Walker and brother to Sir Thomas Walker, Knight. He died 10 Jan., 1691; buried 14th, St. Mary Arches, M.I. They had issue a daughter and heiress—Mary, who married

William Ponsford, of Exeter, merchant ; he died 12 March, 1735 ; buried 16th, St. Mary Arches, M.I.

VIII. Mary, married (marriage licence, 21 Jan., 1680) George Saffin, merchant, of Exeter ; son of Simon Saffin, Sheriff of Exeter, 1680 ; he was baptized at St. Paul's, Exeter, 27 March, 1631 ; Bailiff 1669, 1679, and Mayor of Exeter 1686. They had issue:—

- (1) George Saffin, matriculated, Exeter College, Oxford, 23 March, 170 $\frac{1}{2}$, age eighteen ; died 31 August, 1707 ; buried in the chapel, M.I.
- (2) Elizabeth, buried St. Martin's, 6 Feb., 1728.
- (3) Mary, baptized St. Martin's, 1 May, 1686. She married — Stuart.
- (4) Dorothy, buried St. Martin's, 19 Nov., 1732.
- (5) Penelope, who by her will, dated 28 Sept., 1742, bequeathed £100 for the Charity School of Axminster.
- (6) William, baptized St. Martin's, 17 March, 1688.
- (7) Anne, baptized St. Martin's, 6 March, 1691.
- (8) Thomas, buried St. Martin's, 17 June, 1734.¹

Alderman George Saffin, Esq., was buried at St. Martin's, 4 May, 1694, and Mrs. Mary Saffin, widow, was buried there 5 May, 1731. Mary Southcott was probably his second wife, as there was issued a married licence, 10 July, 1669, to George Saffin, of the City of Exeter, and Penelope Walrond, of Woolfardisworthy, spinster.

Thomas Southcott, of Dulcis (third but second surviving son of Thomas and Mary), died 3 Dec., 1715, aged 71 ; buried Kilminster Church, M.I. Will dated 25 June, 1713 ; codicil 28 Dec., 1714 ; proved 27 Sept., 1717, P.C.C. (179, Whitfield). He married first—Joanna, eldest daughter of William and Ann Collyns, of Colwell ; she was baptized

¹ Thomas Saffin, of Exeter, woollen draper. Will dated 24 Jan., 1733 ; proved 2 July, 1734, by sister Penelope Saffin the ex^{ix} (*P.R. Bishop, Exeter*). Names sister Mary Stuart ; cousins George, Thomas and Jane Southcott. Bequeaths to sister Penelope, the message and tenement in par: of Axminster called New Park: To S.P.G.F.P. £500: To Charity Schools in City of Exeter £100: "Whereas I have lately contributed £10 per ann. for the support of a reading master within the parish of Axminster for the teaching of twenty poor children to read and instruct them in the Christian religion and being desirous to continue the same for some time after my death my will is and I do give the sum of £50 for that purpose, etc." Also mentions Carwithen cousins. Seal—Arms of *Saffin*.

at Offwell 14 May, 1645; married there 2 June, 1669, and there buried 19 Dec., 1696, having died 14 Dec., M.I. Offwell Church. He married second—Jane Churchill, who was buried at Kilminster 1 Aug., 1747; her will dated 22 Oct., 1744, was proved 22 Aug., 1747, in the Court of the Archdeacon of Exeter. Thomas and Jane Southcott had issue:—

- I. George Southcott, of Dulcis, matriculated at Trinity College, Oxford, 11 March, 1719, aged nineteen; buried at Offwell 12 Dec., 1765. Will dated 3 Oct., 1761; proved 4 Jan., 1766, P.C.C. (34, Tyndall).
- II. Thomas Southcott, of Ottery St. Mary, Attorney-at-Law. Buried at Kilminster 21 March, 1750. Will dated 15 Jan., 1750; proved 23 Aug., 1751, P.C.C. He married in the chapel of Ash House, Musbury, 14 Jan., 1744, Joan Fry, of the City of Exon; she married, secondly, at Ottery St. Mary 8 Sept., 1757—Theodore Darley. Thomas and Joan Southcott had issue:—

- (1) Michael Southcott, born 2 Sept.; baptized Ottery St. Mary 10 Oct., 1746. In the obituary notices of the *Gentleman's Magazine*, p. 283, March, 1793, is the following:—

“Michael Southcott, Esq., a few years ago well known in the county of Devon; whose happy, gay and convivial disposition gilded many a social hour. When in the sunshine of prosperity, he was seen linked in friendly intercourse with the great and affluent.”

The History of Devon, by Lysons, Vol. I, p. 182, says:—

“The late Michael Southcote, of this line, married the heiress of Popkin, of Wales: his eldest son, erroneously supposing himself descended from the Southcotes of Bliborough, in Lincolnshire, assumed the title of Baronet; he died without issue, and his younger brothers, Henry and Philip, are supposed to be the only male descendants of the family.”

- (2) Frances Fry, born 28 June; baptized Ottery St. Mary, 25 Jan., 1749.

III. Jane, died 2 Dec.; buried at Axmouth 10 Dec., 1779. Will dated 21 Aug., 1765; proved 23 Jan., 1796, Court of the Archdeacon of Exeter. She married at Kilminster 10 Dec., 1734, John Hallett, of Stedcombe, Axmouth, son of Richard Hallett, of Stedcombe, and his wife, Meliora Hothersall; baptized at Lyme Regis 4 June, 1703; buried at Axmouth 13 May, 1747. Will dated 14 March, 1746; proved 17 June, 1747, P.C.C. (152, Potter). They had issue:—

- (1) Southcott Hallett, of Stedcombe, born 30 Oct.; baptized at Ottery St. Mary, 1 Jan., 1736; matriculated at Trinity College, Oxford, 12 Feb., 1755; M.A. 26 April, 1759; died 13 Oct.; buried at Axmouth 17 Oct., 1772.
- (2) Richard Hothersall Hallett, born 8 Jan.; baptized Ottery St. Mary 20 Feb., 1737; matriculated Trinity College, Oxford, 8 Dec., 1755; B.A. 1759; M.A. 1762; Vicar of Axmouth 23 July, 1764; died 7 Jan.; buried at Axmouth 14 Jan., 1814.

For a Pedigree of *Hallett of Stedcombe*, see *Somerset and Dorset Notes and Queries*, Vol. XIV, p. 145.

MEMORIAL INSCRIPTIONS.

Offwell Church. Tablet.

Hic prope requiescat Joanna
uxor de Thomæ Southcott de
Kilminster gen: filia natu
maxima Gulielmi et Annæ
Collyns de Collwell Armig:
obiit 14 die Decembris Anno
Domini 1696.

Reader within the silent tombe,
Great Nature's dark retiring roome
A pious female saint doth rest
By heaven with shining virtues drest
Soe good a wife that her bright name
Should live in the records of fame
Religious, just and most sincere
To which the world such strangers are.

Arms—*Southcott* and *Collyns*, quarterly.

Ofwell Church. Tablet.

Hic juxta sita est Dorothea
 uxor Henrici Southcott gen :
 filia Gulielmi et Annæ Collyns
 de Collwell armig : hoc etiam
 Sepulchro una cum sororibus
 Suis et avis pro avisque sepulta
 obiit die 16 Sept: anno Dni: 1698.

Reader to thy feet doth lie
 A pattern of true piety
 Sincerely honest, modest, just
 She is here inclosed mixed with the dust
 Of her pious ancestors where they shall rest
 Till raised again to be for ever blest,
 And with their happy souls united sing
 Anthems of praises to their glorious King
 In blissful mansions of eternal ease
 Sing Allelujahs to the God of Peace.

Arms—*Southcott* and *Collyns*, quarterly.

*Kilmington Church, a large Marble Monument on the
 North Wall.*

Juxta positæ sunt exuviæ Thomæ Southcott de Dulcis ar :
 ex antiqua et numerosa familia de Southcott oriundi
 in qua emicuit Michael Southcott de Southcott Anno
 Dom: 1243

hæc Stirps non in hoc comitatu radices suas antiquitus
 agendo

magis quam in exteros feliciter ramos extendendo celebranda
 præfatus Thom: Southcott filius secundus fuit Thomæ
 Southcott et

Mariæ filiæ Thomæ Shapcott de Shapcott armigeri
 nepos autem Georgii Southcott qui uxorem duxit Joanam
 filiam et Hæredem Bernardi Fry de Dulcis armigeri
 qui filius fuit secundus Thomæ Southcott de Calverly ar:
 ex Maria filia Johannis Croker de Lynham armigeri
 Ille vita cessitt 31 Dec: 1715 ætatis suæ 71.

Patriæ amicus suorum amans

in cujus et Majorum Memoriam Georgius Southcott de
 Dulcis ar:

Filius Natu Maximus hoc Monumentum posuit Ano:
 Dom: 1735.

From Michael Southcott aforesaid.

Descended.

Judge Southcott, who lived in the reign of Queen Elizabeth.

Sir George Southcott, of this county, Knight and Baronet.

Sir Popham Southcott, of Mohuns Ottery and Indeho, Knight.

Sir John Southcott, of Bliborow in Lincolnshire.

Sir Edward Southcott, of Witham in Essex, Knight.

Three shields of arms :—

I. *Southcott*, impaling—dexter. *Croker of Lynham*—sinister—sable, two swords in saltire, argent, hilts and pommels in chief, or, the dexter surmounted by the sinister—*Holway*.¹

II. *Southcott*, impaling *Fry*.

III. *Southcott*, impaling *Shapcott*.

Kilmington Church. Stone on Floor of N. aisle.

Here lyeth the
Bodies of Elizabeth
and Joan davgh
ters of George South
cot of Dogleheise sen^r
gent 1674.

Arms—on a lozenge—*Southcott*.

Farrington Church. Tablet on Wall of Tower.

In memory of Samuel Tanner
Esqr who died the 24 day
of December Anno Domini 1688
Also Mary his wife ye daughter
of George Southcot of Dowles
Hays Esqr who died the 19
of October Anno 1657
Also Isabella Tanner who died
21 August 1684 and Francis
Tanner who died 10 December 1688
Their grandchildren
and Edith aged 2 years 1695.
George Tanner buried 20 May 1664.

Arms—*Taner* impaling *Southcott*.

¹ *Vivian* states that Thomas Southcott married secondly, Margery, dau. of . . . Dene; the above impalement seems to show she was a daughter of *Holway* and probably widow of . . . Dene. She was sister to Peter Holway, of Hemiock.

WILLS.

Henry Southcott of Whrittle, Co: Essex, gent, in health of body : 12 Feb. 1680 : To be buried in parish church of Whrittle : To Thomas Southcott my brother's second son £100 : To Mary Saffin my brother's daughter 40 guineas : To Henry Southcott my brother's third son my lease¹ of the ffairs and markett of Axminster, held by me by lease from the Rt: Hon: William, Lord Petre for 99 years if our two lives so long should chance to live : To Samuel Taner my sister's son, Yedie Bartlett my sister's daur: Lucye Ivey my sister's daur : and Mary Taner my sister's daur : each 20 guineas : To my servant Abraham Carr, Walter ffoukes my boy and my servant Anne Pearse : To poor of Whrittle £5, and of Kilmington £5 : Residue to George Southcott my brother's eldest son whom I make exor: (W.) John Petre' ffra: Woolmer, Edward Clove, Anne ffinch.

Proved, 17 June 1683, by George Southcott.

P.C.C. (76, Drax).

Thomas Southcott of Kilmington : gentleman : at present in health : To be buried in parish church of Kilmington near my ffather and mother : To poor of Kilmington 40s. and of Offwell 40s. : To Susan Batt of Offwell widow what she owes me and the house she lives in : To my daughter Jane Southcott £1100 at 21 or marriage : To my son Thomas Southcott at 16 my farm called Bever, my trustees to manage it until 21 : Sum of £120 lent to John Gibs of Axminster on mortgage of tent^s called Studhays, Hawkers Moors and Moons Goare : To my son Thomas Southcott £24 a year until age of 21 for his education : To my daughter Jane also £100 at 23 : To my wife during widowhood : To my son George Southcott under 21 and make him my exo^r if he dies before 21 my son Thomas to be my exo^r and if he die before 21 my daughter Jane Southcott to be exi^s : my farm of Elliott Hays and Clithorne : my Rectory and tything garb of Withycomb : To my sister Saffin : To my son George Southcott my lands in Offwell for life and to his heirs in tail male rem^r to my son Thomas Southcott and his heirs in tail male rem^r to heirs of my son George rem^r to heirs of body of my son Thomas rem^r to my daughter Jane Southcott and heirs

¹ Dated 8 May, 1667 ; regranted 11 May, 1699, to Dr. Henry Southcott of Offwell, and 1 Nov., 1708, to Thomas Southcott, of Dowleshayes, Esq.

of body rem^r to my nieces Dorothy and Mary Saffin and heirs of their bodies rem^r to my niece Ponsford and heirs of body rem^r to my right heirs : my Trustees to be Samuel Tanner of Crely Esqre Theodore Tanner his son my cosen Thomas Saffin of Exon gent Walter Oake of Combyne gent and my wife : Dated 25 June 1713 : (W.) fra: Hussey James Dunning Tho: Way Elenor flory:

Codicil, 28 Dec^r 1714 : To my son Thomas Southcott my lease from Lord Petre of Studhays, Hawkers Moors and Moons Gore in all 40 acres, parcel of Bever Grange and ffursly in Axminster now in tenure of John Gibs of Beer, yeoman, for 99 years commencing after death of s^d John Gibs and Richard Gibs his brother, upon the life of my s^d son Thomas:

(W.) James Anning James Hitt:

To my sister Saffin and my five nieces Mrs. Mary Ponsford, Elizabeth Saffin, Penellopy Saffin, Dorothy Saffin and Mary Saffin, rings:

Proved, 27 Sept. 1717, by George Southcott.

P.C.C. (179, Whitfield).

Jane Southcott of Fordhayes in the parish of Kilmington, Co: Devon : being aged and infirm but of a sound and perfect mind memory and understanding : First I give and devise all that my messuage or Tenement in Kilmington aforesaid called Coxhays with its rights members and appurtenances unto my son George Southcott and his heirs for ever also to said son George Southcott the sum of £100 : To my son Thomas Southcott I give the sum of £400 : I give to my nephew William Churchill Esq. the sum of £100 in Trust never the less to and for the sole and separate use benefit and disposal of my daughter Jane now wife of John Hallett Esq^r to be by him my said Nephew received placed out at Interest or otherwise disposed of as my said daughter alone by any writing under her hand shall direct and the Interest and produce thereof to be from time to time in the meanwhile received by my said daughter whose receipt or acquittances shall be sufficient discharges as well for such legacy as for the interest and proceeds thereof : Lastly all the rest residue and remainder of my real and personal estate mortgages Bonds Notes and Securities for ready money plate goods chattles and effects whatsoever which I now am or w^{ch} at the time of my Death I shall or may be entitled unto I

give devise and bequeath the same unto my son Thomas Southcott whom I make whole and sole Executor : Dated 22 October, 1744. (W.)

Mary Beare. Sarah Howell. Seal—Arms of *Southcott*.

Proved 22 August, 1747. (Court of the Archdeacon of Exeter.)

Thomas Southcott of Ottery St. Mary : gentleman : weak and infirm : To be decently interred in the burial place of my ancestors in the parish church of Kilminster : To my dear and loving wife Joan Southcott all her jewels etc. and £100 in addition to the provision made for her on or in order to our inter marriage also all my household goods plate etc. until my son Michael Southcott is 21 or if he die sooner, until my daughter Frances Southcott is 21 or marries : To my ^{sd} wife my postchaise and the two horses belonging thereto called Punch and Puppit and my riding horse called Blaze : To my brother George Southcott Esqre my horse called Caunter : To my nephew Southcott Hallett my cream colour colt and to my nephew Richard Hothersall Hallett my mare colt fallen in the same year with my colt given to his brother from my mare called Polly Peachum : To Thomas Putt of Coombe Esqre. George Southcott Esqre. my brother and Joan Southcott my dear and loving wife all my manors lands and heredit^s etc. and my copyholds part of the Manor of Ottery St. Mary upon trust for maintenance of my son Michael (at the rate of £30 a year until he is fourteen, £60 a year until he is 17 and then £80 a year until 20, or £150 a year if a member of one of the Universities or Inns of Court) and for maintenance of any younger children that I may have and to raise £2000 for portions for such younger children and then upon trust for my son Michael Southcott and the heirs of his body rem^r to any other son and heirs of his body rem^r to any daughter or daughters and heirs of body rem^r to my brother George Southcott, my sister Jane Hallett, widow and Joan Southcott my wife as tenants in common Lands called Beaver and New Park in Axminster : Tenemt. called Dulcis als Dowleshayes now belonging to my said brother George Southcott : my portion of tithes in Ottery St. Mary called Rill or Rull Mow which I hold of the Dean and Canons of Windsor for 21 years renewable every seven years and to be renewed pursuant to a covenant in my marriage

settlement : my leasehold lands etc. in Kentisbeare if unexpired to be for benefit of Jane Southcott¹ my natural daughter by Mary the wife of Thomas Pulman of Ottery St. Mary fielmonger : if they are expired then my portion of tithes called Rill als Rull Mow to be for her benefit : this to be in addition to provision already made for her by deed : My Trustees to retain Thomas Mundy² of Ottery St. Mary, gentleman as their steward and agent : my wife to have the guardianship of my son Michael Southcott and my daughter frances Southcott and any other children I may have : The s^d Thomas Putt, George Southcott and Joan Southcott to be my exors : Dated 15 Janry. 1750. (W.) Dorothy Mundy. Thos. Mundy. Thos. Seaward.

Codicil, 2 March 1750 : To my servant Thos: Seaward £10.

(W.) Thos: Mundy, Jos. Chilcott.³

Proved, 23 Aug. 1751, by Joan Southcott, power reserved to Thomas Putt and George Southcott.

George Southcott of Dulcis, Esqre. To my kinswoman Ann Bartlett now living in the house with me my tenemt: in Harford for life : To William Churchill of Dorchester Esqre. and Reymundo Putt of Plymouth gent all my lands etc. in Kilmington and Offwell upon trust to use of my nephew Michael Southcott son of my late brother Thomas Southcott for life and to his heirs in tail male rem^r to the use of my nephew Richard Hothersall Hallett youngest son of my sister Jane Hallett for life and to his heirs in tail male rem^r to use of my nephew Southcott Hallett eldest son of my s^d sister and to his heirs in tail male rem^r to use of such person or persons as I shall by codicil appoint : To my nephew Michael Southcott under

¹ From *Ottery St. Mary Registers* :—

1729. Jane Southcott, base child of Mary Marker, whose reputed father is Thomas Southcott, Attorney-at-Law, baptized April 10.

1808. Jane, daughter of the late Mr. Thomas Southcott, buried March 7.

² Thomas Mundy, an attorney, was son of Matthew Mundy, Rector of Fen-Ottery, Vicar of Harford and Rector of Plymtree, by his wife, Cecil, daughter of Marshall Ayer, of Fen-Ottery.

He married at Ottery St. Mary, 5 May, 1755, Mrs. Elizabeth Marker and had a son, Mathew, born 26 June, 1758, baptized 4 August. Thomas Mundy, one of the Governors, was buried at Ottery, 25 April, 1771, and his widow Elizabeth was buried 27 April, 1805.

³ Vicar of Upottery.

21 : To my sister Jane Hallett the lease of the ffairs and marketts of the Town of Axminster :

Residue to my s^d sister Jane Hallett and make her exix: Desire to be buried in parish church of Offwell under my late ffather's first wife's monument and a plain monument to be erected for me as I sat up in Kilmington Church in memory of my s^d ffather with the inscription of the Pedigree of my ffamily and of the time of my decease. Dated 30 Oct. 1761. (W.) John Symes. Abr^m. Spiller. Tho: Grigg junr.

Proved, 4 Janry. 1766, by Jane Hallett widow.

P.C.C. (34, Tyndall).

Jane Hallett late of Stedcombe, but now of Colliton in Co: Devon, widow : 21 August 1765 : First it is my desire that my Body shall be deposited in my son Hallett's family vault att Axmouth and to be privately interred at the discretion of my Exors: : To son Richard Hothersall Hallett his exors. and administrators all that my messuage and Tenement called Edice and Woodlands Tenement situate in parish of Axmouth aforesaid with its appurtenance to hold to him and his Heirs and assigns for ever also all that meadow called Kerbys meadow situate in the parish of Collyton aforesaid also to my son all my silver plate chinaware and all my household goods I dye possessed of : all the rest Residue and Remainder of my goods and chattles real and personal estate whatsoever and wheresoever (not before Devised) I give devise and Bequeath unto my two sons Southcott and Richard Hothersall Hallett their Heirs Executors etc. forever share and share alike equally to be divided between them.

Two sons exors.

(W.) Edw^d Burnard. James Marwood. Sarah Burnard.

Proved 23 January 1796. (Court of the Archdeacon of Exeter.)

I am indebted to the kindness of O. A. R. Murray, Esq., c.b., for the Wills proved P.C.C.

THE BAPTISMAL FONTS OF DEVON.

PART IV.

BY MISS KATE M. CLARKE.

(Read at Plymouth, 20th July, 1916.)

V.

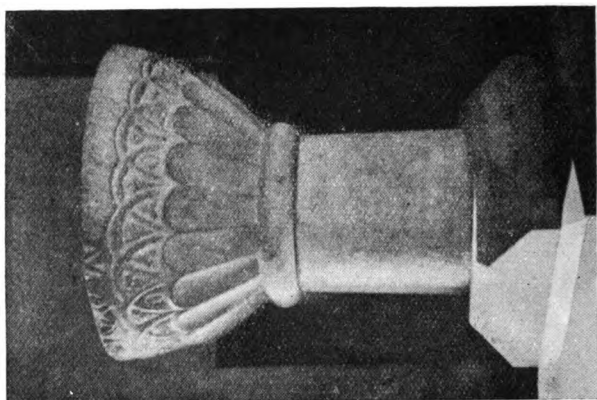
THE PEDESTAL-FONT.

WE have seen that Norman fonts, starting as plain tubs, became more and more elaborately treated, and culminated in finished works of real beauty; we have also noted that they are all independent creations, no two alike. Towards the end of the twelfth century fonts showed a tendency to greater simplicity, this grew in force, and by the thirteenth century the pendulum had swung so far that many font bowls were only ornamented by panelling, and many were quite plain.

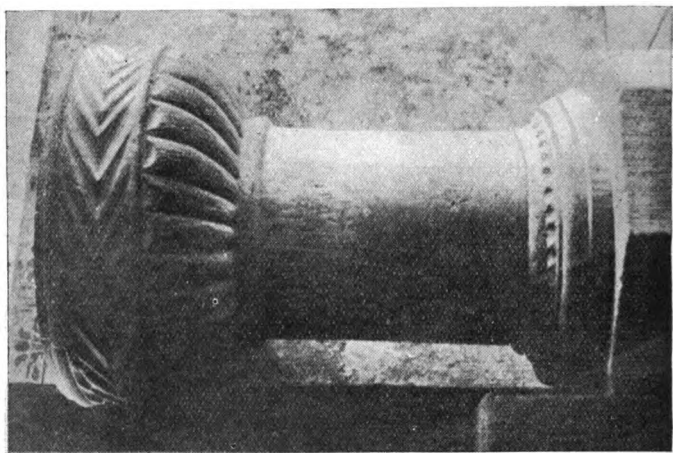
If the illustrations to my earlier papers have been followed I think it will be clear that by natural course of development the girdled tub was gradually modified, and the font at length took the form of a bowl resting on a cylindrical shaft. It has been called "cup font" and "chalice font"; the latter term is incorrect because the shaft is plain without the knop which is on the stem of a chalice, and "cup font" conveys no reference to the shaft, so I have adopted the term "Pedestal-Bowl," as though it is clumsy and ugly it expresses the form of the font.

Hitherto we have traced the progress of the font along a fairly straightforward line, but the point is now reached when the line is split into subdivisions, which, springing from the same centre, diverge, like the rays of a fan.

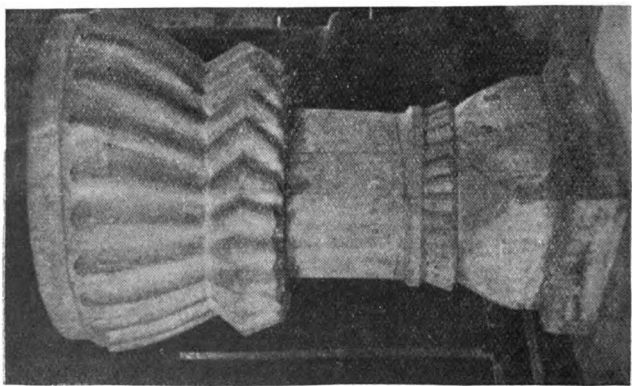
As mentioned earlier, this category of fonts does not pretend to offer precise chronology; its aim is to point out how one feature may become merged in or superseded by another. To arrange in some sort of order the separate links in of development.



EAST PUTFORD.



TWITCHEN.



MONKLEIGH.

BAPTISMAL FONTS OF DEVON.—*To face p. 303.*

Pedestal-fonts fall into three main divisions : circular bowls, cushion bowls, and square bowls. The three groups are practically contemporaneous, probably less than fifty years would cover their entire production. In each group the earlier ones will be noted first, so as to lead up to the later examples of the same style, and it must be remembered that though one group must needs be taken first, the second and third groups are not later in date, but start at the same time from the same centre, and all are developed simultaneously, each in its own direction.

CIRCULAR BOWLS.

40. *Monkleigh.*

This font is of unique design, but is more curious than beautiful. The rim of the bowl has a plain band $2\frac{1}{4}$ inches deep ; below this the bowl is covered with round-topped raised panels which taper towards the foot of the bowl. This design is a reversal of the channelled flutings which appear on many Romanesque fonts, but the panels have the same relative proportions as the flutings, and undoubtedly are allied to them.

Between bowl and shaft is a band of chevron 5 inches deep and $4\frac{1}{2}$ inches thick. This substantial moulding recalls those on the girdled tub-fonts, and in this case gives the font a top-heavy appearance.

The base is an inverted cushion 7 inches deep ; originally 13 inches wide each way, but on the western side rather more than an inch has been cut away, so that the north and south faces measure not quite 12 inches.

The shaft is plain, but towards the foot, below a square moulding, is a row of small inverted cones, 2 inches long.

I am inclined to think that this font has been altered ; that it was constructed as a girdled tub, and that some modern Philistine cut the lower half into the form of a base and shaft. The meaningless row of insignificant cones trimming the bottom of the shaft like a frill on a petticoat, could never have sprung from the brain of the original designer, whose conception was at least bold. If, in imagination, the lower part of a girdled tub-font, such as Cheriton Bishop, were substituted for the paltry shaft, the mind's eye would, I feel sure, see the font in its original form.

41. *Twitchen.*

This is a fine font, but the original proportions have been sacrificed by lengthening the shaft. The bowl is exactly like that of Withypool, a few miles away in the county of Somerset, which font remains in its primitive form.

While Withypool font leaves nothing to be desired in the harmony of its proportions, the elongated shaft of Twitchen is a great mistake.

Round the upper part of the bowl is a band of chevron moulding 6 inches wide; the rest is filled by a row of cones springing from the neck moulding, the broad ends form semicircles in the usual way, though as the subdivisions follow the curve of the bowl they look more like horns than cones.

The base is circular. Below a round moulding is a fine row of detached nail-head ornament placed on a slope. The narrow moulding below is not very regular, but its general profile is angular; below this is a round moulding above a square moulding, with a quirk between the two. This base rests on an octagonal plinth 27 inches wide, each face measures 11 to 11½ inches in width.

The cylindrical shaft, as has been already mentioned, has been lengthened; the original part, of a grey stone like the bowl, is 7 inches deep, and the addition, which is of a reddish stone, 12 inches.

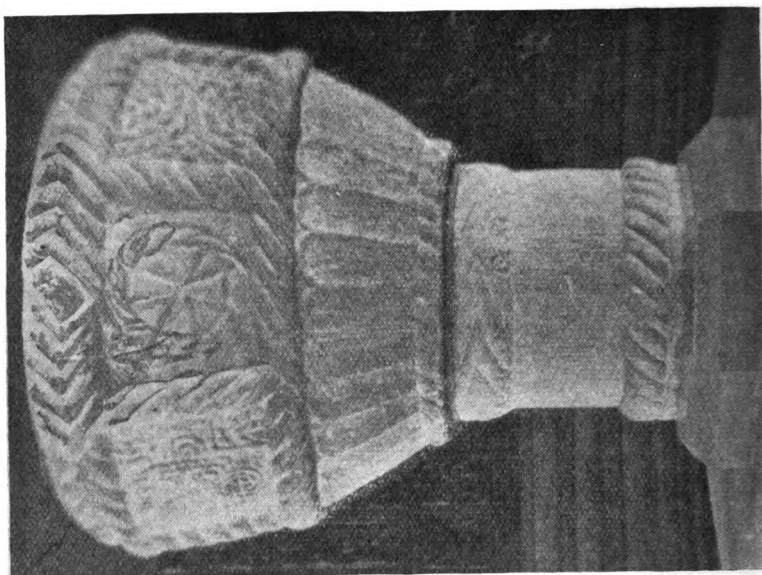
There are some patches of new stone in the upper part of the bowl; the thickness is grooved to take a cover. There is a pewter basin inside the bowl.

ROMANESQUE FONTS.

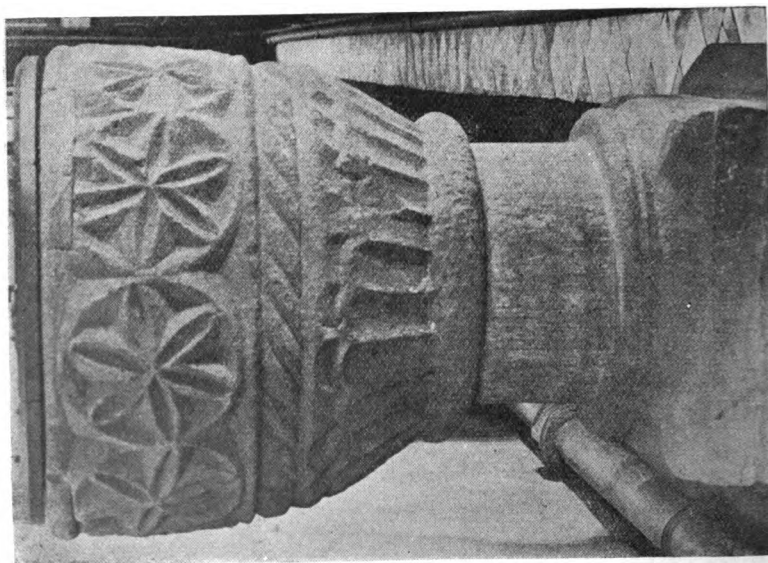
In foregoing papers we have noticed several fonts ornamented in Byzantine style.¹ By the middle of the twelfth century this style had attained a great vogue, and we have some very handsome fonts of this period, called Romanesque.

As works of art the Romanesque fonts are perfectly satisfactory; the proportions are generally good, the sculpture is deeply cut and rich in light and shade; but they lack one of the great charms which is often found in

¹ Farrington, St. Mary Steps, Exeter, West Anstey, Bishopsteignton, Cheriton Bishop, Buckland-in-the-Moor, Combe-in-Teignhead, and Coffinswell.



BIDEFORD



HARBERTON. Photo by Mr. A. W. Searley.
BAYNARDI. FORTH OF DEVON.—To face p. 305.

earlier work,—Symbolism. The art is purely decorative, and it is impossible to read any meaning into it.

With a few exceptions our Romanesque fonts may be brought into two groups : Fluted bowls and Honeysuckle bowls.

FLUTED BOWLS.

Classical flutings have already been noticed on the tub-fonts of St. Mary Steps, Exeter, Farringdon, and Cheriton Bishop, and these were of course the forerunners of the fluted pedestal fonts we have now reached. Some have flutings combined with medallions and other ornaments ; later the flutings fill the entire depth of the bowl, and might almost be taken for early English work were it not for the presence of the Norman cable or chevron between the bowl and the shaft. The cable forms a link between the pedestal bowl and the girdled tub.

This is a particularly interesting and valuable group, and it seems strange it has not attracted more notice from writers on fonts.

42. *Harberton.*

A very beautiful font ; the ornament is almost pure Byzantine. It is of red sandstone ; the bowl, unusually deep, is raised on a low circular shaft, with a modern base. The bowl is ornamented by ten medallions, star pattern ; below the medallions is a cable, below again a row of double flutings, one above the other. Then there is a round moulding which is not a necking to the shaft, but rather the foot of the bowl. The modern base consists of two flattened mouldings separated by a fillet ; there are spurs at the angles, and it stands on a square plinth.

The rim has had to be patched in four places, probably where the staples of the cover were wrenched away, taking pieces of stone with them. Also two of the medallions have been cemented where they were cracked. The bowl has a lead lining.

43. *Bideford.*

This handsome font after being turned out and put to base uses was restored to the church in the first half of the nineteenth century.¹

¹ Mr. George Doe has kindly shown me a drawing of Bideford font, made in 1850 by an artist named Fuller. This shows the bowl only, standing on the floor, without any shaft. Happily the original shaft was preserved, and now supports the bowl.

The bowl is circular ; the lower part is fluted ; above the flutings it is divided into eight panels framed in cable twist. Round the rim is a band of chevron ornament $4\frac{1}{2}$ inches deep ; it must originally have measured about 6 inches, but the rim of the font has been cut down, so part of the chevron is lost. On the eastern half the design is broken at intervals of about 10 inches, and reversed ; the interspaces form diamonds and crosses. Over the western half the design is continuous. The cables framing the panels also twist alternately to right and left. This feature of reversal indicates a rather late date in the Norman period.

The cable at the foot of the panels is not a regular horizontal line, but drops from the west to the east, so that the westernmost panel is only 6 inches deep, while the easternmost varies from 8 to 9 inches.

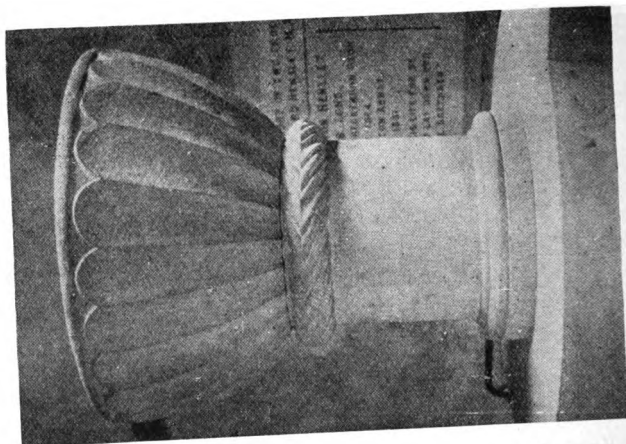
The three panels facing east are filled with ornament. The central one has a Maltese cross surrounded by a circular cable, with incised devices filling the corner spaces. To the left is an interlaced cross, and on the right an arrangement of four divergent loops, each of three concentric cables.

At the foot of the bowl is a cable, and there is another band of chevron $4\frac{1}{2}$ inches deep at the head of the cylindrical shaft, at the bottom is a cable 4 inches wide. The cable does not reach the verge of the stone, there is a plain space of about an inch below. This feature has already been noted on the *bowls* of three other fonts in the same neighbourhood ; West Putford, Bulkworthy, and Abbot's Bickington.

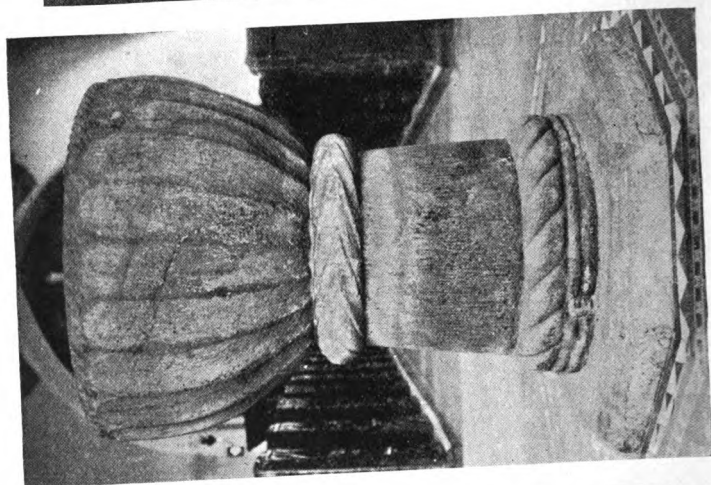
The font, with all its parts complete except the rim, is an excellent example of its type, and as far as the arrangement of the ornament goes it is quite unique.

44. *East Putford.*

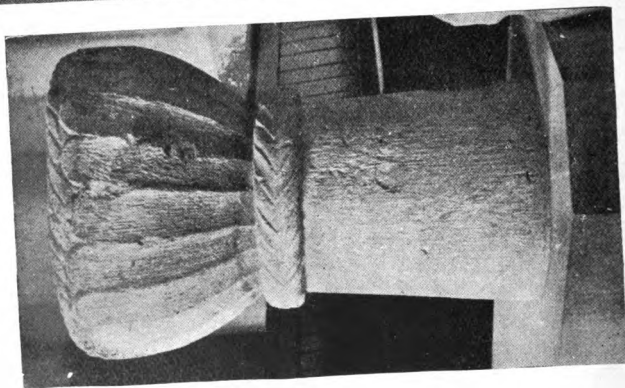
This interesting font has unfortunately lost the upper part of the bowl. As previously mentioned, if a font has been broken or mutilated it is almost invariably in the horizontal direction. No doubt the reason was that the lower part could still be used as a receptacle. Often the severed rim was kept and reunited to the rest of the bowl in later and happier times, but this it appears did not happen at East Putford.



PARKHAM.



ABBOTSHAM.



BEAFORD.

BAPTISMAL FONTS OF DEVON.—To face p. 807.

Originally the rim of the font must have been adorned for part of its circumference by a band of star medallions similar to Harberton. At present there is just enough left to show what it was ; the lower portions of four of the stars, filling $15\frac{1}{2}$ inches horizontally. The corresponding space round the rest of the bowl is left plain, but is axe-worked. The rough edge has been filled up and made smooth and level with cement.

The bowl was evidently much like Harberton, though on a smaller scale. If 8 inches were removed from the top of Harberton font the resemblance would be seen at once, so it may be deduced that East Putford has lost about 6 inches. This conclusion is supported by the abnormal shallowness of the bowl ; $5\frac{1}{2}$ inches only.

The lower part of the bowl is ornamented with round-headed flutings ; above these is a series of interlaced half-circles ; the resulting interspaces are filled with small ornaments, mainly variations of the trefoil, but they are much diversified. Above the interlacing is the remnant of star medallion band already mentioned. The bowl is not lined.

The font stands on a cylindrical shaft which rests on a modern plinth, square, with the corners chamfered off, and a second lower platform.

45. *Abbotsham.*

Hitherto we have noticed the great diversity of the ornament on fonts ; each was the work of the local stonemason, who was an artist, more or less, who imagined suitable subjects, and executed them as well as he could. In the later fonts resemblances are found, but it has not appeared that any one is copied from another. We now reach a point when several fonts are made from one pattern ; the font-maker has become a specialist, and having hit on a good pattern repeats it.

There are five fonts with bowls fluted for the whole depth except for the rim moulding. They are all in North Devon, and the flutings and general air are so much alike that it would be reasonable to think the same hand made them all except for one puzzling feature. Three of the five fonts are encircled by the Norman cable, or chevron, or both, while two have no chevron nor cable, but an Early English moulding at the base. There is a choice of two conclusions ; either the production of the fonts

extended over a considerable time, or the cable and chevron were a recrudescence, copied from other fonts in the neighbourhood.

Personally I incline to the second theory, and I place these fonts in the last quarter of the twelfth century.

Abbotsham font has a neatly worked cable round the rim; the bowl is covered with round-topped flutings reaching almost to the cable. Between bowl and shaft is a heavy band of chevron. At the base is a broad cable resting on two shallow round mouldings on an octagonal plinth.

The font looks as though a coating of paint or white-wash had been scraped off; the surface has naturally suffered in the process, and has no appearance of antiquity. But there are still traces of axe-dressing; coarse inside the bowl, finer in other parts.

The outline of the bowl is extremely graceful and pleasing; it is of gourd shape; rather narrower at the rim than it is a few inches below.

The font stands on a pavement of glazed, coloured tiles which are an eyesore; the stone quarries which compose the rest of the floor would be much more appropriate to the fine old font.

The material is grey Devonian stone; the bowl has no lining.

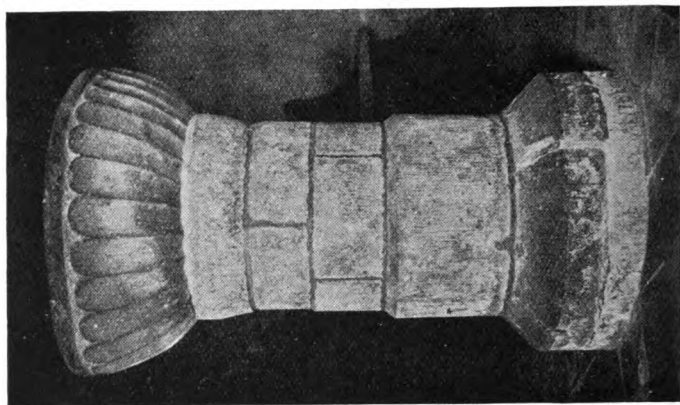
46. *Beaford.*

A small but charming font of reddish stone. There is an unassuming cable at the rim, above the round-headed flutings which cover the rest of the bowl, and it has a heavy chevron moulding between bowl and shaft. The bowl contracts at the rim as at Abbotsham.

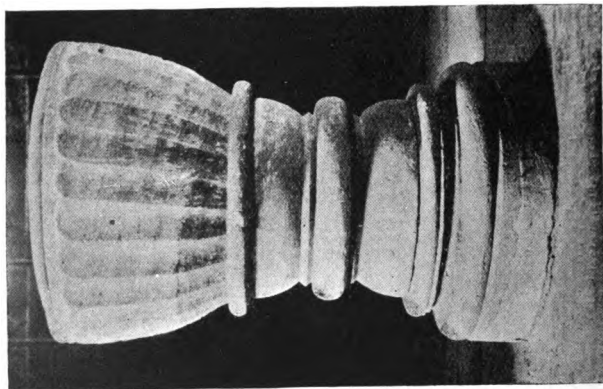
The bowl appears to have been at some time detached from the shaft, but no part of it is missing. The shaft itself has a crack on the western side which has been carefully repaired, and unhappily a large slice has been taken off on the eastern side, no doubt so as to cram a pew up against it. However the pew is not there now.

The shaft is higher than usual, and perhaps for that reason there is no base, but it is now raised on a modern plinth.

The bowl is not lined and the drain-hole is stopped up. The staples of the cover are gone, but their lead setting remains.



BRADFORD.



CLAYHANGER.

BAPTISMAL FONTN OF DEVON.—*To face p. 809.*

47. *Parkham.*

This graceful font is very much like that of Abbotsham though it varies from it in outline, because the bowl expands at the rim while at Abbotsham it contracts ; also the shaft is purely cylindrical ; Abbotsham's is slightly conical. There is no cable at the rim.

Between bowl and shaft is a chevron moulding ; this has an unusual feature ; the pointed sections are alternately raised and sunk.

The shaft has a base moulding of two flattened rounds with a quirk below.

The round-topped flutings which cover the bowl measure about 4 inches at the widest and $2\frac{1}{4}$ at the narrowest point.

The font is of grey Devonian rock ; it is in very good condition, and has an appropriate pavement of old North Devon tiles.

48. *Clayhanger.*

The bowl is fluted throughout its entire depth except for the mouldings at rim and foot ; the flutings are narrower than we have hitherto met with, only $2\frac{1}{2}$ inches at the widest part and $1\frac{1}{4}$ at the foot. The plain space above the flutings is from $\frac{1}{2}$ to 1 inch deep ; it has an arris edge, above which is a round moulding. Within that in the thickness of the stone is a flat moulding 1 inch wide, and then a square sunk moulding $\frac{1}{2}$ inch wide. This may originally have held a cover or perhaps a lead lining ; there is no lining now. There are two neatly drilled holes on both north and south sides which may have held the cover staples ; on the east is a single hole ; none on the west.

The round mouldings take the place of the cable and chevron which we noted with surprise in the three fluted fonts with which we have just dealt.

As usual the bowl was hacked in two, horizontally, but the two parts have been cemented together. At the foot of the bowl is a large round moulding.

The shaft cannot be commended. It is all turned on the lathe in the most obnoxious modern style. A sort of travesty of the girdled tub, with an assertive moulding like a pneumatic tyre round its waist. It must have been the original shaft, probably quite plain as in every other

instance, that was made into this ugly shape, for, strange to say, the original base moulding remains ; it is of early thirteenth-century character with a fillet on the lower side. It is interesting to note this late feature on a type of font which began with Norman chevron and cable.

The bottom of the bowl is flat ; there is no lining. Possibly on account of the horizontal crack it does not hold water well, for the drain-hole is stopped up, and a pewter basin stands inside the bowl.

The font is of Ham Hill stone.

49. *Bradford.*

The bowl is fluted in the same way as the four preceding examples, but is oval in plan and much shallower than the others. The shaft has been lengthened by the insertion of two courses of shaped stones ; the lower part of the shaft projects about an inch beyond this construction, and has a chamfer at the top. This looks as if the shaft had originally been wider at the bottom than the top, like Abbotsham and Beaford.

The greatest diameter of the bowl is from north to south ; it is in nearly perfect condition, but has been repaired with cement on the east and west faces ; it bears traces of whitewash. The dressing is vertical ; this is unusual in a font, where it is generally diagonal.

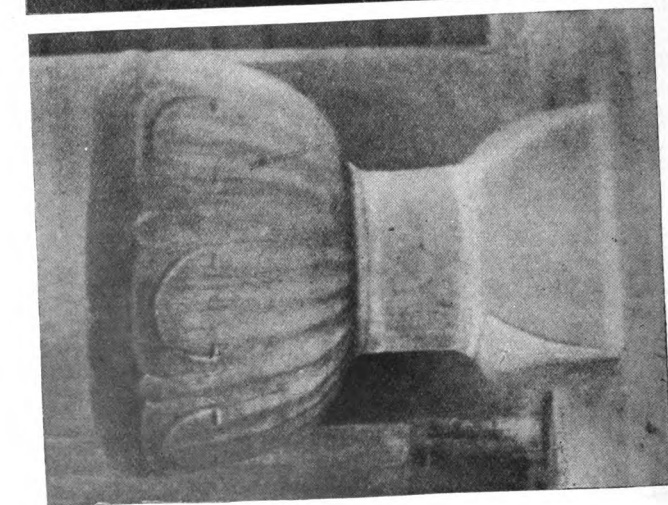
The font has no cable nor chevron, only a round moulding at the rim. It is made of local stone which has a general tint of grey with reddish patches, and if it had never been whitewashed the colour would have been beautiful.

The bowl is not lined.

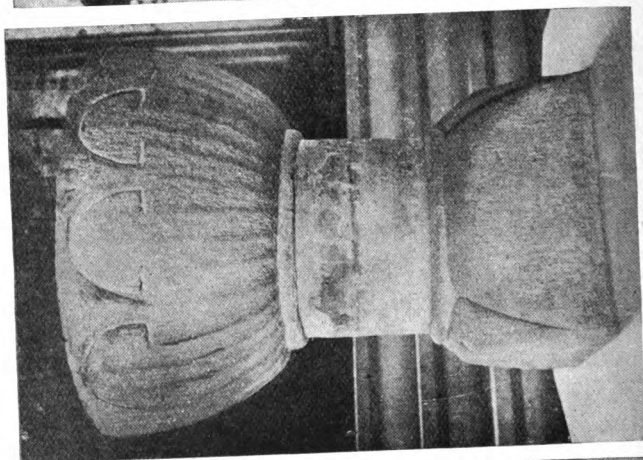
50. *Southpool.*

We now meet with an entirely new feature. The bowl is covered with flutings over the whole depth as in the preceding examples, but just below the rim is incised a row of semicircles with the ends turned inwards. The returned ends are brought to the sides of the flutings, and the half-circles are so cleverly placed that the eye is carried down, and though the flutings are unaltered an entire key device is suggested ; the effect is eminently pleasing and refined.

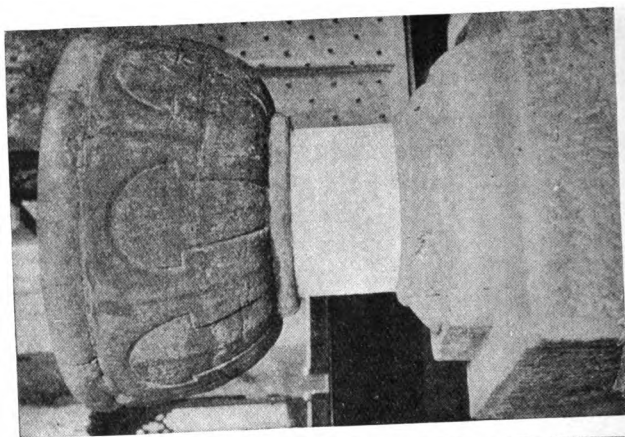
PLATE V.



SOUTHPPOOL.



RATTERY.



DITTISHAM.

BAPTISMAL FONTS OF DEVON.—*To face p. 311.*

Between the semicircles are deep notches, and the rim is a bold round moulding.

The low shaft is cylindrical with a narrow necking; the base is an inverted cushion capital. It stands on a modern platform, but in other respects is in its original condition. The font is of red sandstone, some portions bear a greyish deposit.

51. *Rattery.*

The ornamentation of this font is exactly like Southpool, so the same description will apply to it, but unfortunately it has suffered the loss of its round rim moulding which has been pared away. No doubt it was in a bad condition, as the rim often is in the case of a soft stone, but the appearance of the font is affected very injuriously.

The bowl and shaft are of red sandstone; the shaft is in two pieces; it has a moulding at both top and bottom. The plinth is an inverted cushion as at Southpool; the material is a grey stone.

52. *Dittisham.*

A notice in the church states that the font was dug up 150 years ago from a field where it had been buried, probably in order to preserve it from the army of Fairfax.

It may have been originally similar to Southpool and Rattery, for the difference which at present exists suggests the restorer's touch. The main part of the bowl is filled with key pattern on flutings as in those fonts, but here, instead of being suggested by the flutings, the outline of the key is incised completely, the sides as well as the semicircular heads; by this means the fluted effect almost disappears, and with it much of the refinement of the earlier design. It is indeed so very definite that one cannot resist the suspicion that the completion of the key is due to the mistaken zeal of a modern restorer. Sandstone is so invitingly easy to work.

The rim is a round moulding made of seven pieces of stone; it is of course an addition taking the place of the old rim, which no doubt was damaged. The bowl has been cracked horizontally and repaired.

The shaft is a cylindrical white stone; this no doubt is also a modern addition. It has a sandstone necking $1\frac{1}{2}$ inches deep. There is a round base of two rather flat

mouldings, standing on a shallow square plinth which has the top edge and the corners chamfered off, but the north-east corner has been made out with cement. The font is raised on a large solid block with a shallow platform below.

FONT WITH VOLUTES.

53. *Loddiswell.*

A very fine example. Round the bowl is a series of bold and cleanly cut volutes, arranged in pairs ; the triangular space between the curves is filled by an ornament, either trefoil or a pair of leaves. Above the volutes is a band of Norman star ornament, and below a row of saw-tooth.

The bowl is of red sandstone, but coated in places with a white or greyish green deposit. The shaft and base are of polyphant stone. The base is circular, with four bosses or spurs springing from it to fill the angles of the square plinth below. There is a second plinth or foot-stall, a square with the corners chamfered off, and it is further raised on a platform which follows the same plan.

The cylindrical shaft has a round neck moulding and a narrower one at foot.

This font cannot be included in any definite group, as there is no other at all like it, but as the vertical lines of the volutes may faintly be referred to those of the flutings, and as the star and saw-tooth ornament occur frequently in the succeeding group of honeysuckle fonts, it seems best to insert it between these two groups, as possessing features of each.

HONEYSUCKLE FONTS.

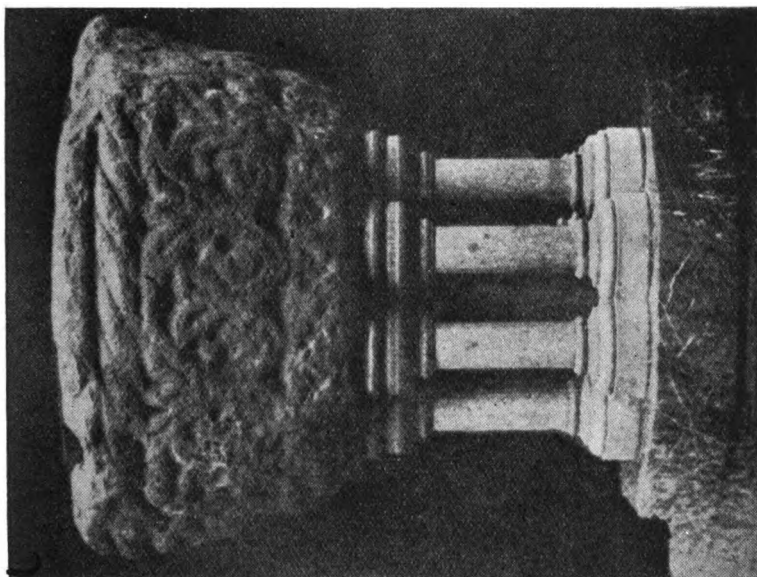
There are twelve pedestal-fonts adorned with the Romanesque type of honeysuckle or palmetto,¹ all made of red sandstone. In Cornwall the same ornament appears on the fonts of Fowey and Lanreath ; that of Fowey is similar in shape to the Devon honeysuckle fonts, and of about the same dimensions as the larger ones, but the material is catacleuse stone.

We have already found the honeysuckle design on three

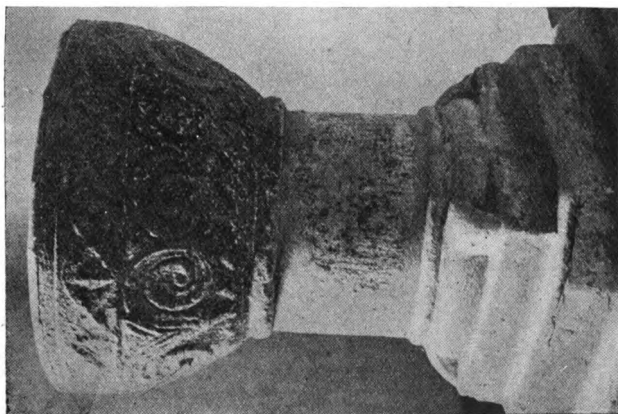
¹ At the International Congress of 1892 Professor Bonavie said that the Assyrians, to protect a tree from the Evil Eye, fastened the horns of ibex or goats to the branches. In paintings of the Sacred Tree the horns appeared, and the idea of the curved horns on the upright trunk was adopted by the Greeks in the honeysuckle pattern.



BUCKFASTLEIGH.



PAIGNTON.



LODDISWELL.
Photo by Mr. T. Clarke.

girdled tub-fonts: West Anstey, Bishopsteignton, and Buckland-in-the-Moor, and on the later fonts of Coffinswell and Combe-in-Teignhead. All these are of Caen or other cream-coloured stone, but they must have been the models for the red fonts. Many are in the neighbourhood of Bishopsteignton.

The cup-shaped bowl and short cylindrical shaft are like Southpool; so also is the round moulding at the rim which distinguishes every honeysuckle font, though in a few cases, alas! it has been mutilated, or even removed altogether, to be replaced by a modern sham.

The main feature of the ornament is a band of honeysuckle pattern; the width varies from $9\frac{1}{2}$ inches in the earliest examples to 6 inches in the latest. In its perfect form it has a cable twist above it and a band of saw-tooth below. Seven of the twelve possess these three features, namely, St. Andrew's, Paignton, Buckfastleigh, Ugborough (cable almost destroyed), Thurlestone, Wolborough, Blackauton, and South Brent. In the five other fonts the saw-tooth is discarded, and the space below the honeysuckle is left plain. Cornworthy seems to be the earliest of these five, as the honeysuckle band is unaltered, though the cable is replaced by star ornament, but Ashprington, a little later, with a narrower band of honeysuckle, still retains the cable.

At St. Petrock's, Dartmouth, the cable has disappeared; the honeysuckle band forms the whole ornament below the rim moulding. At Denbury and Plymstock there is a narrow band of honeysuckle just below the rim; the rest of the bowl is plain.

54. *St. Andrew's, Paignton.*

This is the largest of the honeysuckle bowls and is of the earliest type, with the three essential features of saw-tooth, honeysuckle and cable. It is much weather-worn, as it was outdoors for a long time.

At the rim is a round moulding, somewhat damaged, but fortunately not tampered with; two wide grooves indicate that formerly the cover was held in place by pins. Below the moulding is the cable twist; at the foot of the bowl saw-tooth $5\frac{1}{2}$ inches deep, and between the two a band of honeysuckle ornament 9 inches deep.

The condition of the bowl, with no attempt at re-cutting

or patching, is quite satisfactory, and it seems strange that anyone with enough perception to respect the bowl should have made a shocking blunder in designing the support. This is composed of eight small pillars on the model of the thirteenth century surrounding a large central pillar, raised on two spreading octagons, one on the other, of polished marble. The pillars and the marble, however well they may accord with the church as a whole, are egregiously inappropriate to the battered red sandstone bowl. There is no excuse, for there are in the district many honeysuckle fonts, either of which would have supplied a pattern.

55. *Buckfastleigh.*

A very interesting font, one of the earliest of the group, and further noteworthy because in addition to the central shaft it is supported by three Romanesque pillars of older type than the font itself. Whence these pillars came it is impossible to say; they might have formed part of a Norman sedilia or wall arcade. One has an Ionic volute on the capital, the others have plain mouldings only. They are $19\frac{1}{2}$ inches high.

The bowl has the three features which mark the perfect form of honeysuckle font; namely, a row of saw-tooth, a cable below the round moulding of the rim, and a broad band of honeysuckle between.

It is of red sandstone but has been whitewashed. The shaft is cylindrical, with one round and one square moulding at foot; it rests on a plinth 12 inches deep.

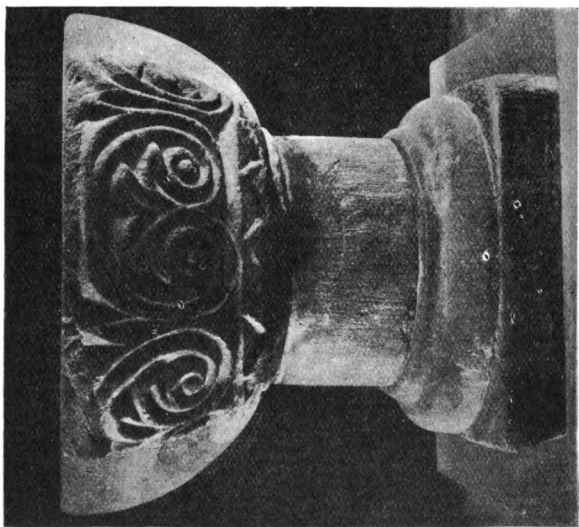
It is not easy to get a satisfactory or complete photograph of this font, as it is wedged in between pews and a wooden platform on the western side.

56. *Ugborough.*

This font must originally have been one of the finest of its class, but it has been sadly mutilated. Only about 25 inches remain of the rich honeysuckle ornament and a corresponding length of saw-tooth which originally encircled the whole bowl. All the rest was planed away; the small section that is left was only saved because it happened to have been built into a pillar, and could not be reached by the devastator. In witness whereof the mark



BLACKAUTON.

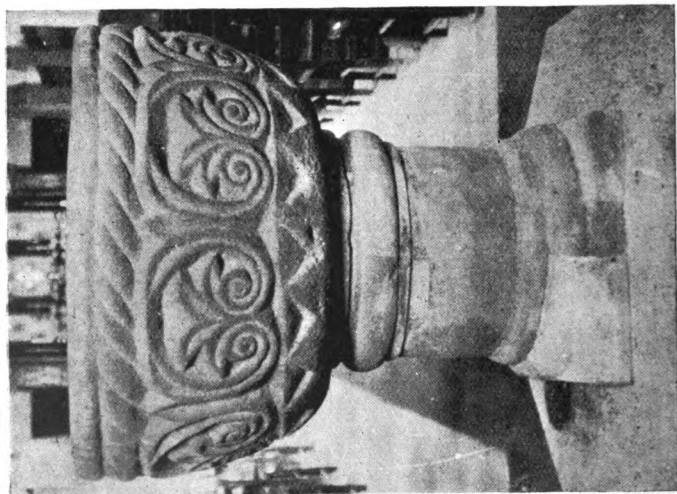


UGBOROUGH.

Photo by Mr. A. W. Serrey

BAPTISMAL FONTS OF DEVON.—*To face p. 314.*

PLATE VIII.



THURLESTONE.

BAPTISMAL FONTS OF DEVON.—*To face p. 815.*



WOOLBOROUGH.

Photo by Mr. A. H. Scarley.

on the pillar is still shown. As if this were not enough the rim was cut down to the extent of at least 4 inches ; there are slight traces of a cable twist for a few inches, and probably there was a round moulding above the cable. By comparing the measurements that are available it may be concluded that it was about the size of Wolborough font, but the honeysuckle ornament is wider and more deeply cut.

The bowl stands on a short thick shaft with a round moulding as necking, and has a moulded circular base on a square plinth further raised on two steps.

The font is not used, but is well placed towards the western end of the church.

57 and 58. *Thurlestone and Wolborough.*

I said that all the honeysuckle fonts have their individual character, and so they have, but these two are so much alike that the small shades of difference cannot be conveyed in cold print, so they may be described together.

The bowl has the same features as the fonts already noted ; palmetto or honeysuckle for the main ornament, saw-tooth below and cable above ; all well balanced, except that the saw-tooth is rather too narrow. I think this blemish may be due to the removal of an inch or two at the foot of the bowl, for in neither font does the bowl fit quite comfortably on the shaft.

There is a necking at the head of the shaft ; at Thurlestone this is unusually wide, $4\frac{1}{2}$ inches. The shaft has a round base. That at Wolborough spreads more than Thurlestone, and is of a later type, so also is the necking.

Below the base is a square plinth.

Both fonts are entirely of red sandstone.

59. *Blackauton.*

This is the largest of the honeysuckle fonts with the exception of Paignton.

The system of ornament is exactly the same as in the two fonts just described, but the carving is deeper and richer ; the shape of the bowl is perfect, as the saw-tooth has not been cut down. If I may offer my opinion it is that at Blackauton the honeysuckle font reaches the highest point of beauty, and happily it has not suffered

under the hand of the "restorer," who might often be rather called the "devastator."

60. *South Brent.*

Though this fine font has all the characteristic features of the developed honeysuckle bowl it has a distinct style of its own, because the design is modified; the subdivisions of the honeysuckle, instead of touching, as in every other instance, are separated from one another by an appreciable space, so that the individual groups are deeper than broad, while usually the reverse is the case. The bounding lines are single, whereas in all the rest they are double. The cable twist below the rim is so wide that it looks almost like a series of lozenges. The saw-tooth at the foot of the bowl remains unaltered.

The font is of red sandstone, but the bowl is white-washed. It has been repaired in some places, and new stone inserted. There is no lining.

61. *Ashprington.*

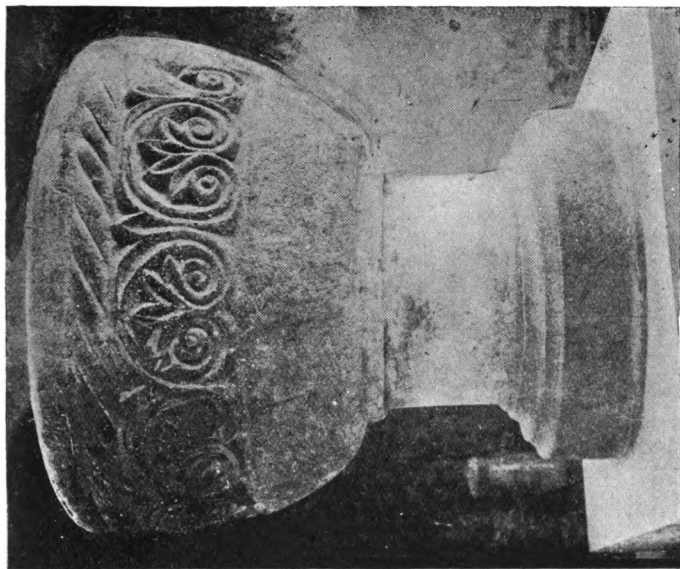
This font resembles Blackauton in shape and style, but the honeysuckle band is rather narrower, and below it, instead of saw-tooth there is a plain surface, 10 inches deep. This is the first sign of the tendency to reduce, and eventually discard ornament, which culminated in the thirteenth century in very plain fonts.

Ashprington font is entirely of red sandstone, and is in excellent condition, not cracked at all. There is a round moulding between bowl and shaft, and a circular base $1\frac{1}{4}$ inches deep which looks original; there is a round slab beneath it which is an addition, and it is further raised on two modern steps. The bowl has a lead lining.

62. *Cornworthy.*

Another honeysuckle font differing from those previously described in having a row of star ornament below the rim, instead of the cable twist which has hitherto always been present. Like its neighbour at Ashprington, there is a plain surface below the honeysuckle; no saw-tooth.

It is of red sandstone except the neck moulding, which is of grey stone, and a false rim of slate, in four pieces,



ASHPRINGTON.



SOUTH BRENT.

Photo by Mr. J. Amery.

BAPTISMAL FONTS OF DEVON.—To face p. 316.



DARTMOUTH (ST. PETROCK).



CORNWORTHY.

BAPTISMAL FONTS OF DEVON.—To face p. 317.

painted white. No doubt it replaces the original rim, as at Dittisham.

The font has a round base with a broad shallow moulding and circular plinth below. This is raised on a square block faced at the sides with black glazed tiles. They look like patent leather.

The star ornament is a little discoloured by damp, and a few inches on the western side are damaged ; otherwise it is in good condition, though it is a great pity the original rim was not retained.

The bottom of the interior of the bowl is cemented ; the sides are not lined.

63. *St. Petrock, Dartmouth.*

This font takes us yet another step of departure from the perfect type of honeysuckle font ; the cable below the rim has followed the saw-tooth and disappeared, replaced by a round moulding, and the band of honeysuckle is the sole ornament.

The bowl is of red sandstone ; it bears traces of white-wash. At the rim it is cut to octagon shape to the depth of $1\frac{1}{2}$ inches. Probably the rim was damaged as in the case of nearly all the red sandstone fonts, and this curious method of trimming it up was adopted. I have not found it in any other font.

The shaft and plinth are of a greyish stone.

The bowl is different in outline from the others in the group, as it spreads more towards the rim, the shaft is short and thick. The balance of form is excellent.

64. *Denbury.*

The rim has a round moulding only, and no cable. Below this is a band of honeysuckle 6 inches deep ; the rest of the bowl is plain. Here in a very pronounced way we notice how the Romanesque font is leading to the more severe Early English type. The honeysuckle has worked its way to the top of the bowl, and is nothing but a band covering less than a third of the depth.

There is a round moulding between bowl and shaft, and a similar one at the foot of the shaft. The base is a combination of base and plinth ; the lower portion has the corners chamfered off a square, higher up it becomes

circular, flattened at the cardinal points. Above is a base ring, also flattened, but not so much.

The font is entirely of red sandstone.

65. *Plymstock.*

This font has the same characteristics as Denbury, with the curious difference that the honeysuckle which hitherto has been unvarying in arrangement is reversed, and the containing stems are absent. The work is shallow and flat ; the flatness is no doubt due in part to modern restoration, which appears to have been much overdone. The mouldings, including the base moulding of the shaft, are the same as at Denbury, but the circular base, which is either modern or modernised, is not so satisfactory as the sloping one at Denbury.

The font is overweighted by its accessories: a polished marble plinth and a towering octagonal cover of carved panels.

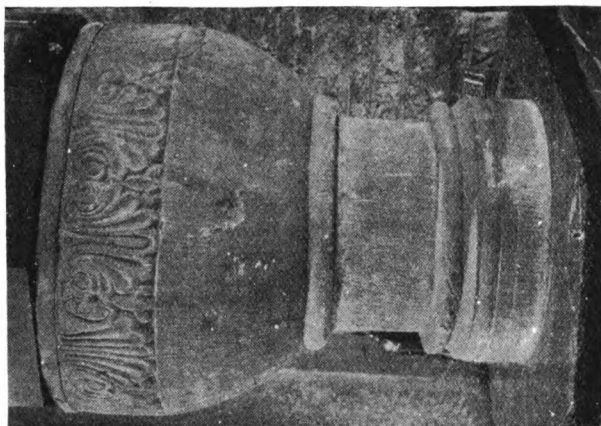
Here we part from the honeysuckle fonts. Their immediate successors have bands of star or cable ornament at the rim ; the ornament gets narrower and narrower, and finally disappears altogether.



DENBURY.

Photo by Mr. A. W. Searley.

BAPTISMAL FONTS OF DEVON.—*To face p. 318.*



PLYMSTOCK.

	Entire Height.	Bowl.				Shaft.	Cable
		Outside.	Diameter.		Depth.		
			Inside.	Outside.	Inside.		
40. Monkleigh .	34	24	19½	12	8	11½	5
41. Twitchen .	38½	27½	20¾	12 : 15	9½	20½	—
42. Harberton .	38	27	20½	— 21	10½	7	—
43. Bideford .	41	34½	25	25 : 27	13	15½	—
44. East Putford .	26	23½	16½	10½ : 12	5½	12½	—
45. Abbotsham .	33	26½	18½	14½ : 16½	9¾	11	3½
46. Beaford .	33½	22½	19	13 : 14	7	17	3½
47. Parkham .	33	29½	22½	14½ : 16	9	11½	3½
48. Clayhanger .	34¾	22	17½	13	8½	—	
49. Bradford .	38	24½ : 21	20 : 16½	7½ 9	6½	22½	
50. Southpool .	35	32	22	17½ : 22	10½	9	
51. Rattery .	35	28	20½	12½ : 15½	8½	9	
52. Dittisham .	31½	29	22	17½ : 22	10½	8	
53. Loddiswell .	30½	27½	22	17	11	10½	Honeyuckle band.
54. Paignton, St. Andrew's .	37	36	23½	18½ : 20½	12	—	9
55. Buckfastleigh .	30	28½	19	18½ : 20½	10½	9½	8½
56. Ugborough .	28½	30½	20½	— 10	7	7½	9½
57. Thurlestone .	36	30½	21	18½ 20½	9	6	9
58. Wolborough .	36	30½	21	18½ 20½	12	7	9
59. Blackauton .	33	33½	21½	19 : 22	10	6¾	8½
60. South Brent .	36	30	20	19 : 21	12	9	9½
61. Ashprington .	38½	34½	25	19½ : 23½	12	8	8
62. Cornworthy .	31½	30½	20½	18 : 20	9½	7	8
63. Dartmouth, St. Petrock .	33	32	21½	19 : 20	10	8½	8
64. Denbury .	38½	30½	24½	19 : 20	15	7	6
65. Plymstock .	35½	29	20½	18 : 19	12	7	6

Entire height gives measurement of bowl and shaft, with base moulding if any, but not plinth.
 Depth of bowl. The first figure gives the depth measured vertically, and the second the measurement round the curve.

DEVON COUNTY MEMBERS OF PARLIAMENT.

PART V.

THE STUART PERIOD (1603-1688).

BY J. J. ALEXANDER, M.A., J.P.

(Read at Plymouth, 20th July, 1916.)

I. INTRODUCTION.

THE seventeenth is undoubtedly the most important century in the growth of English parliamentary institutions. It is also looked upon as the most interesting in connection with our local history, and its yield of papers to the Devonshire Association seems to confirm this view.

The official return (Blue Book 69) does not give a complete list of Devon Members during the Stuart period, but the defects can be supplied from other sources. A later return (Blue Book 69 II) contains the Earl of Manchester's list of the 1614 parliament, and the other parliaments can be completed from Browne Willis' *Notitia Parliamentaria* (Vols. II and III), which, with the Harleian and Somers Tracts, are specially useful for the Commonwealth assemblies.

There is little need to dwell on the importance of these seventeenth-century parliaments. They form an epitome of our whole parliamentary history from the thirteenth century to the present time. Nearly every striking incident, nearly every remarkable situation, nearly every strange anomaly in the records of other centuries has its parallel in the Stuart parliaments. And in addition they present certain features which are unique among the annals of this country.

At the end of the Tudor period Devon was represented by eighteen members, two for the county at large, and two each for the eight boroughs of Exeter, Barnstaple, Totnes,

Tavistock, Plympton, Dartmouth, Plymouth, and Bere Alston. Tiverton was granted the same privilege in 1615 by a charter of King James I, for the curious reason that the town had been lately burnt with loss to the value of thirty-five thousand pounds, and he wished therefore to benefit the inhabitants by giving them full corporate rights. Three older boroughs, Ashburton, Honiton, and Okehampton, were added in the Long Parliament of 1640. These additions were merely a revival of dormant rights, as Ashburton had made previous returns in 1298 and 1407, and the other two in the reign of Edward II.

There was now no essential class distinction between county and borough members, except that the former were almost invariably landed proprietors of the county, while among the latter one occasionally finds local merchants. Many of the boroughs were controlled by patrons, and at some of the elections a considerable amount of pressure was also exerted to secure the return of persons acceptable to the Court. There is no evidence that this was done in the county elections to any marked extent. With the Reformation, of course, one new element had been introduced, the imposition of religious tests, and from 1563 onward the members returned may be presumed to have belonged to the reformed faith.

From a purely dynastic point of view, the Stuart family continued on the throne till 1714, but on constitutional grounds the period must be taken as terminating with the flight of James II in 1688. Its parliamentary record falls naturally into three portions : the first, from 1603 to 1640, of which the last eleven years are a parliamentary blank ; the second, from 1640 to 1660 ; the third, from 1660 to 1688.

There were four parliaments in the reign of James I, and three in the first four years of Charles I. Two long intervals occurred during which no parliaments met : one between 1614 and 1620 ; the other, to which reference has just been made, between 1629 and 1640. There was one by-election, and the returns give us twelve names, of whom two, Sir Edward Seymour, first baronet, and Sir William Strode, have already been mentioned among the Tudor members. Four successive baronets of the Seymour family, all named Edward, were members for Devon during the seventeenth century.

In the first parliament of James I, Seymour had as his colleague Sir Thomas Ridgeway of Tor Mohun, vice-

treasurer of Ireland. Ridgeway was one of the group of distinguished Devonians entrusted with Irish affairs during and after the Elizabethan reconquest. In 1606 he succeeded his Devonshire neighbour, Sir George Cary, as Treasurer, and retired from parliament. His seat was filled by Sir John Acland, who had previously sat for Saltash, and was the first of the Acland family to seek parliamentary honours ; he is perhaps better known as a benefactor of Exeter College, Oxford.

In the Addled Parliament of 1614, two new members appear : Sir Edward Giles of Dean Prior, who during his later years was a parishioner of Herrick the poet, and John Drake. John Giles of Bowden, the father of the knight, so Prince informs us, was profoundly impressed with his son's title, and treated him with great deference until he found that he was expected to pay the fees for the honour. The name of the second member raises a slight difficulty of identification, as there were at least four John Drakes among the Devon magnates of this time ; but a reference to the list of magistrates in 1614 leaves little doubt that John Drake of Ashe, son of Sir Bernard, and head of the Ashe family, is the one meant.¹

John Drake was three times re-elected. In the 1620 parliament, his colleague was Sir Edward Seymour II, and in 1624, Sir William Strode. It is noteworthy that, in 1635, all the then surviving Jacobean members, Giles, Seymour II, and Strode, were summoned to answer before the Council for their opposition to Ship Money. Giles was too weak to travel, and in the two other cases it was considered that they had been punished enough by being made to travel " four hundred miles to so small a purpose."

Drake's colleague in 1626 was Sir John Pole, son of the great Devonshire antiquary. The members for the previous year take us back to Tudor times ; one of them, Sir Francis Fulford, was the grandson of a 1553 member ; the other, Francis Courtenay, the son of a 1584 member. In the 1628 parliament, the two members, John Bampfylde and Sir Francis Drake, had a peculiarly close family relationship. They were both married at Buckland Monachorum on 22 September, 1603, each having as bride the sister of the other, and the ages of the four youthful spouses ranged from twelve to sixteen. The object of this somewhat unique pair of betrothals no doubt was to

¹ *Trans.*, IX, 404.

avert possible exactions under the old feudal law of wardships. Francis Drake was, as we know, the nephew and biographer of the famous admiral.

The parliaments between 1603 and 1629 were chiefly notable for discussions on constitutional questions. In their personal qualities and social status the members differed but little from those of the Tudor period, except in the proportion of distinguished lawyers who took part in the debates. Devon, usually so prolific in gentlemen of the long robe, does not seem to have supplied any of these, except the younger Sir John Glanville, who was a member for Plymouth in the last five of these parliaments, and the younger William Strode, member for Bere Alston, who studied for the law, but is generally classed among the political agitators rather than among the staid jurists. John Pym, the member for Tavistock, who also had a legal training, must be credited to Somersetshire.

The growing antagonism between the Court and the Commons, and the passion for precedents displayed by the champions of parliamentary rights, gave the debates a strongly retrospective character. The tendency was to invest the Great Charter and other medieval enactments with an importance which they had not previously possessed, and which, even down to the present time, has been much overrated. The plain country squires who sat for Devon must have listened wearily to the long dull speeches in which contending politicians strove to uphold, with the aid of every available fact from history, ancient or modern, their theories of government, taxation, and the royal prerogative.

For eleven years Charles I attempted to govern without a parliament, and when, in 1640, he again called one, many of the previous members were either dead or too old for public work. The three old members who survived in Devon were not heard of again in political life. In their personal composition, therefore, the parliaments between 1640 and 1660 contrast much more with those which precede them than the latter do with those of Elizabeth. There were still sharper contrasts in their activities ; there was not the same reliance on historical precedent ; new theories of government, some of them wildly revolutionary, were put into practice or suggested. And among them is the Long Parliament, definable, in the words of Carlyle, as " the Father of Parliaments, which first set Parliaments

supreme, and has since set the whole world upon chase of parliaments."¹

There were six parliaments in this group, and three by-elections to the Long Parliament. One parliament had seven representatives for Devon, and two others eleven each, so that we have, after allowing for re-elections, twenty-four new names.

In the Short Parliament of 1640, Thomas Wyse of Sydenham, and Edward Seymour III sat for Devon. The Speaker of this Parliament was a Devonshire man, Sir John Glanville of Tavistock, who represented Bristol. Two of the Opposition leaders, John Pym, a Somersetshire squire, and William Strode of Meavy, son of a former Devon member, sat for Tavistock and Bere Alston respectively.

To the Long Parliament of the same year Wyse and Seymour were re-elected. The former died in the following March,² and his sister's husband, Sir Samuel Rolle of Heanton Satchville, was chosen to fill his place. When the Civil War broke out in the following year (1642), the two members were on opposite sides. Edward Seymour and his father (Edward II) were taken prisoners after the Royalist defeat at Modbury. Four years later his seat was declared vacant by the parliament, and Nicholas Martyn of Oxtou was elected instead.

Rolle was a strong parliament man, and an obscure reference to a person with his surname in Disraeli's *Curiosities of Literature* (Vol. II, p. 492) has led some to think that he was the original of Butler's *Hudibras*. But this is highly improbable; for one thing, Rolle was dead more than fifteen years before the poem was published. His successor, Sir William Morice, never actually sat in Charles I's Long Parliament; a few months after his election he and Martyn, and nearly all the other Devonshire members, either ceased to attend or were excluded by Colonel Pride. Only about two representatives out of the twenty-six remained, Thomas Boone (Dartmouth) and General Philip Skippon (Barnstaple); perhaps also Oliver St. John (Totnes); none of them took part in the trial of Charles I.

In 1653 the remnant or "Rump" of the Long Parliament were forcibly ejected by Oliver Cromwell, and an assembly of 144 members was nominated by a Council of

¹ *Letters of Cromwell*, III, Appendix.

² *Commons Journals*, 20 March, 1640-1.

Officers. These included 122 representatives of England, 6 of Wales, 5 of Scotland, 6 of Ireland, and 5 co-opted members, of whom Cromwell was one. Though they were appointed through recommendations from Commonwealth supporters in the various constituencies, and not by direct choice of the leading inhabitants, they are usually described as a parliament, and their deliberations are recorded in the *Commons Journals*. This Little Parliament, or Barebones Parliament as it is sometimes called, contained several men of ability and high character. It was the first assembly in which the four nations were all represented. Most of its legislative proposals were well conceived and thoroughly sound; but many of those who sat in it were men of fanatical temper and without practical knowledge of State affairs. In a few months a majority of its members willingly signed a petition to terminate its existence. Devon was represented by seven members: old Francis Rouse, Provost of Eton, who was the Speaker; George Monk, second in command under Blake of the fleet which was then fighting the Dutch; John Carew, one of the signatories to Charles I's death-warrant; Christopher Martyn of Plympton; and three others whose names appear in the list of Devon Justices for 1654, but not in the list for 1647.¹ They were evidently republican partisans and one or two of them may have been officers in the Cromwellian Army; but they were not in the front rank of the county magnates.

Oliver Cromwell summoned a parliament of 460 members in 1654, and another in 1656, in each of which Devon had eleven representatives. In these, as in the Little Parliament, the number of representatives was in some sort of proportion to the importance of the constituency. There were no borough members, except for the City of London, in 1653; in 1654 and 1656 many of the larger boroughs were enfranchised, Exeter, Plymouth, Totnes, Tiverton, Barnstaple, Dartmouth, and Honiton among the number, but most of them with only one representative.

We can again usefully refer to the published lists of Devon Justices for 1647 and 1654. The 1654 members for Devon include seven of the 1647 magistrates, and four only appearing in the 1654 list; five of the former seven appear in both. The 1656 members include also seven of the 1647 magistrates, and four only appearing in the 1654 list;

¹ *Trans.*, X, 309.

four of the former seven appear in both. The magistrates of the 1647 commission were avowed supporters of the parliament; the 1654 commission retained those of 1647 who had not repudiated their former views, and replaced the others by active republicans, some of them Cromwellian officers. The record of the 1656 parliament gives us two further tests of the political leanings of the Devon members. Five of them were excluded at the outset as suspected of disloyalty to the Protector, and none of the remainder voted in support of raising Oliver Cromwell to the throne. Evidently the Protector had no large personal following in Devon.

Richard Cromwell's parliament of 1659 restored the older distribution of English seats, but retained members from Scotland and Ireland. The Commonwealth legislatures terminated with the revival, in 1659, of the Long Parliament, at first containing only the 1653 members, but afterwards enlarged so as to admit also those expelled before 1649.

From 1660 to 1688 there were six parliaments, and three by-elections for Devon. There are eleven persons involved, of whom eight are new to us. Just as the parliaments of the first group are reminiscent of the sixteenth century so the parliaments of this group are anticipatory of the eighteenth. This is particularly noticeable in two of their least creditable aspects, personal corruption and factious intriguing.

It seems somewhat appropriate that, in the Restoration Parliament, one of Devon's representatives was the leading actor in the Restoration, General Monk, who had sat in the Barebones Parliament as a Cromwellian Admiral. In the Pensionary Parliament, which lasted from 1661 to 1679, a longer continuous existence than even that of the Long Parliament, Monk's son, Christopher, Earl Torrington, sat for the three years before his father's death. Seeing that he was only seventeen when he succeeded as second Duke of Albemarle, it follows that he must have been returned to the House of Commons at the extremely early age of fourteen, a flagrantly illegal proceeding and one which suggests that the House was regarded as an attractive club for young noblemen, rather than as a place for serious legislative work.

The other representatives of Devon in the parliaments of Charles II and James II include two representatives

of the Rolle family, John of Stevenstone and Samuel of Heanton Satchville, Sir Hugh Pollard, Comptroller of the Household, Sir Coplestone Bampfylde, Sir William Courtenay, and Sir Bouchier Wrey. Courtenay and Samuel Rolle had Whig leanings; most of the others were prominent members of what was now coming to be known as the Tory party. Pollard, earlier in his career, had incurred the displeasure of the Long Parliament for his devotion to Charles I, and was expelled from his seat, in 1641, for complicity in an Army Plot. Bampfylde belonged to a family with strong puritan leanings. One of his uncles was member for Exeter and Speaker in Richard Cromwell's Parliament. Another, a clergyman, was deprived of his living in 1662, and died in 1684, after over twenty years of honourable exertion as a poor preacher of Nonconformity. Sir Coplestone himself so far departed from the family tradition as to take a leading part in the oppression of Devon Nonconformists, and if the 1677 pamphlet attributed to Andrew Marvell is to be trusted, he was anything but a puritan in his personal habits. Sir Bouchier Wrey was a capable soldier who fought under Monmouth; he was also of note as a duellist. Courtenay has been idealised in one of Mrs. Bray's novels as "William Henry Courtenay," a royalist stalwart in the Tavistock neighbourhood. The story, down to the giving of two baptismal names to the principal figure, a practice not adopted in England before 1640, is an utter travesty of local history. Modern research has revealed instead an adroit schemer who induced a wealthy old widow on her death-bed to disinherit her own children in his favour.¹ He spoke once in the parliament of 1681, and was stopped by interruptors before he had completed his third sentence. A few years after he was incapacitated for public life by a paralytic seizure, and was thus unable, though he received William of Orange under his roof at Ford, to take any active part in the "glorious Revolution" of 1688.

The most notable of all the Restoration members was Edward Seymour, the fourth baronet. The official returns have treated him unkindly; his name is omitted from the lists both of the Pensionary Parliament and of the one which followed it, though he was a prominent member of each, and on three different occasions was chosen for the position of Speaker.

¹ "Lady Howard of Fitzford," *Trans.*, XXII.

The *Dictionary of National Biography* states that he was member for Gloucester city in the Pensionary Parliament, confusing him with one Evan Seys of Glamorgan, the Recorder of Gloucester. One wonders what the "proud and saucy" Devonshire Cavalier, so overbearing, except among his constituents, towards persons of inferior rank, who on a notable occasion claimed family precedence over his relative the Duke of Somerset, would have said to anyone who mistook a Welsh lawyer for him. Browne Willis, in his list of Speakers, and Chandler, in the reproduction of Marvell's pamphlet already mentioned, both describe Seymour as member for Hindon in Wiltshire. A list, also in Chandler, giving Edmund Ludlow and George How as members for Hindon, and Seymour as member for Gloucester, is obviously incorrect; Ludlow, a noted regicide, being at that time a fugitive in Switzerland. The most likely explanation is furnished by a statement in the *Commons Journals*, 11 May, 1661, that Sir Charles Harbord, elected both for Launceston and Hindon, had waived his claim to the latter. Probably Seymour was at once brought in his place. However it may have been, he soon gained the respect of the House for his business qualities, and was elected Speaker in 1673. Resigning through ill-health in 1678, he was again elected a few months after, his successor having found himself unequal to the duties.

In 1679, one member for Devon in the official list is given as "Henry Seymour, Privy Councillor." Two other Henry Seymours appear in this parliament, and both are identifiable with members of the Seymour family who were not of the Privy Council. Edward Seymour's name does not occur, but there is a record in the *Journals* of his being chosen Speaker and vetoed by the King, an arbitrary proceeding which evoked a passionate but unavailing protest on the part of the parliament, and which marked the royal displeasure at Seymour's attitude towards the favourite Danby. The historians who discuss the incident describe him on this occasion as member for Devonshire. Thus a Devon member was elected Speaker in three of our most notable and most abused parliaments: Esturmy,¹ in the Unlearned Parliament of 1404; Francis Rouse, in the Barebones Parliament of 1653; and Seymour, who, though his appointment was cancelled, enjoyed for a few brief hours the distinction of

¹ Seymour was descended from Esturmy.

being the First Commoner in the parliament which passed the Habeas Corpus Act and originated the Exclusion Bill.

Seymour's hostility to the Court and popularity with the Country Party did not last long, as in the very next parliament we find him planning to upset the Exclusion Bill, and an opposition member, Sir Gilbert Gerrard, bringing forward a motion to impeach him for malversation in his office as Treasurer of the Navy, during the time when he was also Speaker. The impeachment was carried in the Commons, but lapsed on the dissolution of the parliament. It is probable that the charges were not without foundation, but corrupt practices were so common among the members of the Pensionary Parliament that Seymour's conduct does not impress one as strikingly flagrant. In 1695 he was again suspect, being accused with Sir John Trevor and others of having accepted bribes from the East India Company; but in his case the evidence was insufficient. There was, however, a widespread belief that he had intended to benefit largely from the Company's funds.¹

Seymour, as Tory leader in the West, was an important assentor to the deposition of James II, and during the following twenty years took a prominent part in the political struggles under the new constitutional regime. On the accession of Anne he became comptroller of the household, but a political coalition in 1704 for war purposes, drove him into opposition, and his consequent animosity against the government led him rashly to predict, on the eve of the battle of Blenheim, that Marlborough, when he returned to England, "would be hunted like a hare." Seymour, however, did not live to witness the decline of Marlborough's influence, though, to the regret of his Devonshire friends, he long outlived the decline of his own. His really great gifts as a parliamentarian, courage, resource, skill in debate, and business aptitude, were marred by bitter and unscrupulous partisanship.

Charles II held five parliaments and James II one. These bring the total of parliaments considered to nineteen. Forty-four distinct persons are involved, of whom twelve (Thomas Ridgeway, John Acland, William Morice, George Monk, John Carew, Francis Rouse, John Northcote, Hugh Pollard, Christopher Monk, Coplestone Bampfylde, Edward Seymour IV, and Bouchier Wrey) are in

¹ See Macaulay's *History of England*.

the *Dictionary of National Biography*, and a much larger number in Prince's *Worthies*.

As in the four preceding parts, a Schedule of Members and Index of Names is appended.

II. SCHEDULE OF MEMBERS.

To prevent needless verbiage the following abbreviation is used :—

(s)=elected previously for Devon ; refer to first election.

JAMES I.

(Four parliaments, four returns extant.)

1604–1611.

28th February, 1604.

Thomas Ridgeway (a).

Edward Seymour (b).

27th January, 1607.

John Acland (c) *vice* Ridgeway, appointed Treasurer in Ireland.

(a) Sir Thomas Ridgeway (c. 1565–1631) of Torre Abbey, son and heir of Sir Thomas Ridgeway of Tor Wood, M.P. for Dartmouth 1584, and Mary, daughter of Thomas Southcote of Bovey Tracey ; born at Torwood or Torre Abbey ; matriculated at Exeter College, Oxford, 1581 ; student at the Inner Temple, 1583 ; collector of customs at Exmouth ; served in the Azores expedition under Essex, 1595–1597 ; sheriff of Devon and knighted, 1600 ; vice-treasurer of Ireland, 1604 ; treasurer till 1616 ; created baronet, 1611, Baron Ridgeway, 1616, and Earl of Londonderry, 1623. (See D.N.B. and Prince.)

(b) Sir Edward Seymour (c. 1555–1613) of Berry Pomeroy, first baronet. (See *Trans.*, XLVII, p. 370, under 1593.)

(c) Sir John Acland (1545–1620) of Columb John in Broadclyst, second son of John Acland (1521–1553), of Acland in Landkey ; M.P. for Saltash 1586 ; sheriff in 1609 ; benefactor of Exeter College, Oxford. (See D.N.B. and Prince.)

1614.

— March, 1614.

Edward Giles (a).

John Drake (b).

(a) Sir Edward Giles (1566–1637) of Dean Prior, eldest son of John Giles of Bowden, M.P. for Totnes 1586 ; sheriff in 1613 ; M.P. for Totnes 1597, 1621, 1624, 1625, and 1628. (See Prince.)

(b) Probably John Drake (c. 1560–1628) of Ashe, son of Sir Bernard; sheriff in 1605; elected four times for Devon, also for Lyme Regis 1625, and Tiverton 1626; great-grandfather of John Duke of Marlborough.

1621–1622.

12th December, 1620. Edward Seymour (a).
John Drake (s).

(a) Sir Edward Seymour (c. 1580–1659) of Berry Pomeroy, second baronet, son of Sir Edward, M.P. 1604 [q.v.]; M.P. for Callington 1624, for Totnes 1625; fought for Charles I, and was taken prisoner at Modbury, 1642.

1624–1625.

3rd February, 1624. William Strode (a).
John Drake (s).

(a) Sir William Strode (1562–1637) of Newnham in Plympton St. Mary. (See *Trans.*, XLVII, p. 370, under 1597.)

CHARLES I.

1625.

26th April, 1625. Francis Fulford (a).
Francis Courtenay (b).

(a) Sir Francis Fulford (1583–1664) of Fulford in Dunsford, eldest son of Thomas and Ursula, daughter of Richard Bampfylde and sister of Sir Amias, M.P. for Devon 1597 [q.v.]; grandson of Sir John Fulford, M.P. 1553 [q.v.].

(b) Francis Courtenay (1576–1638) of Powderham, second son of Sir William (1553–1630), M.P. 1584 [q.v.]; M.P. for Grampound 1626.

1626.

21st January, 1626. John Drake (s).
John Pole (a).

(a) Sir John Pole (c. 1586–1658) of Shute, son of Sir William Pole, Knt., the famous antiquary (1561–1635); created baronet 1628 (*vita patris*).

1628–1629.

February or March, 1628. John Bampfylde (a).
Francis Drake (b).

(a) Sir John Bampfylde (1586–1650) of Poltimore, son of Sir Amias, M.P. 1597 [q.v.]; M.P. for Tiverton 1621; sheriff in 1634; created baronet 1641; married Elizabeth, daughter of Thomas Drake of Buckland Monachorum.

(b) Sir Francis Drake (1588–1637) of Buckland Abbey, son of Thomas, youngest brother of the famous Admiral, Sir Francis Drake; created baronet 1622; M.P. for Plympton 1624; edited, in 1628, *The World Encompassed*, an account of his uncle's voyage round the globe; sheriff in 1633; married (1) Jane, daughter of Sir Amias Bampfylde, M.P. 1597 [q.v.], (2) Joan, daughter of Sir William Strode, M.P. 1597 [q.v.]. (See Lady Elliott-Drake's *Family and Heirs of Drake*.)

1640.

March, 1640.

Thomas Wyse (a).

Edward Seymour (b).

(a) Thomas Wyse (c. 1603–1641) of Sydenham, in Maristowe, son of Sir Thomas Wyse, K.B., and Margery, daughter of Robert Stafford of Stowford; M.P. for Callington 1625; for Bere Alston 1626, and 1628; sheriff in 1638. (See *Trans.*, XLI., pp. 133–136.)

(b) Sir Edward Seymour (1610–1688) of Berry Pomeroy, third baronet; son of Sir Edward, second baronet and M.P. for Devon 1621 [q.v.]; taken prisoner at Modbury 1642; “disabled” 1644; M.P. for Totnes 1679 (twice) and 1685.

1640–1653.

20th October, 1640.

Thomas Wyse (s).

Edward Seymour (s).

March, 1641.

Samuel Rolle (a) *vice* Wyse, deceased.

23rd June, 1646.

Nicholas Martyn (b) *vice* Seymour, disabled.

15th August, 1648.

William Morice (c) *vice* Rolle deceased.

December, 1648.

Martyn and Morice excluded.

(a) Sir Samuel Rolle (c. 1585–1647) of Heanton Satchville, in Petrockstow (the modern mansion is in Huish), eldest son of Robert Rolle and Joan, daughter of Thomas Hele of Fleet; admitted to Inner Temple 1608; knighted 1619; M.P. for Grampound 1625, for Callington 1640; member of Parliamentary Committee of Safety 1642, and of Devon Parliamentary Commission 1643; assisted in defence of Exeter 1643; granted pension by parliament 1645. (See Cotton's *Barnstaple during the Civil War*.)

(b) Sir Nicholas Martyn (1593–1653) of Oxton in Kenton, son of William Martyn (1562–1617), historian, and M.P. for Exeter 1597, also recorder of Exeter 1605 (see D.N.B.); knighted 1624; sheriff in 1639; member of Devon Parliamentary Commission 1643, and assisted in defence of Exeter 1643. (See Prince.)

(c) Sir William Morice (1602–1676) of Churchton in West Putford, and, from 1651, of Werrington, elder son of Evan Morice, chancellor of Exeter diocese, and Mary, daughter of John Castle of Scobchester in Ashbury; B.A. Exeter College, Oxford, 1622; sheriff in 1652; M.P. for Newport (Launceston) 1658; for Plymouth 1660 and 1661; secretary of State, knighted, and privy councillor 1660; resigned office 1668. (See D.N.B.)

COMMONWEALTH.

A portion of the Long Parliament, known as the Rump, continued sitting till 1653, but contained no members for Devon.

1653.

6th June, 1653.

George Monk (a).

John Carew (b).

Thomas Saunders (c).

Christopher Martyn (d).

James Erisey (e).

Francis Rouse (f).

Richard Sweet (g).

(a) General George Monk (1608–1670) of Potheridge in Merton, second son of Sir Thomas Monk; distinguished general; served as Admiral in the Dutch wars, 1652–1654, and subsequently as commander of the forces in Scotland; promoted the restoration of Charles II, 1660, and was created Duke of Albemarle and lord-lieutenant of Devon. (See D.N.B.)

(b) John Carew (c. 1610–1660) of Antony in Cornwall, second son of Sir Richard Carew, baronet, M.P. for Mitchell 1621, and son of Richard Carew, the antiquary, M.P. for Saltash 1584; M.P. for Tregony 1647; signed death-warrant of Charles I, 1649; councillor of State 1653; member of several parliamentary committees; opposed title of Parliament being given to 1653 Convention; J.P.

for Devon 1654; a rigid republican; executed 1660. (See D.N.B.)

(c) Probably the Thomas Saunders, Major of Foot in Parliamentary army, who was governor of Plymouth Fort 1656; also J.P. for Devon 1654. There was another Thomas Saunders, M.P. for Derbyshire 1654, 1656, and 1659, from whom it is difficult to distinguish the Devon M.P. One of the two, a major serving at Brecknock in June, 1648, is mentioned in Carlyle's *Cromwell* (Letter LX). At least seven of this name appear in the calendar of Devonshire Wills within forty years of 1653. All that we know definitely from the *Commons Journals* is that this Devon M.P. was a Major, and that he sat on two Committees of the Barebones Parliament, one relating to the Poor, and the other to Scottish affairs. The Derbyshire Saunders was among those secluded in 1656; the Devon M.P. sat on the Irish Committee then, and was described as governor of Plymouth Fort. (See *Commons Journals* and *Harleian Miscellanies* (1810, ed. VI, 457).)

(d) Christopher Martyn, of Plympton St. Maurice, M.P. for Plympton 1646, 1659, and 1660; excluded in 1648; J.P. for Devon 1647 and 1654.

(e) James Erisey (1616–1692) of Bickleigh in E. Devon, second son of Richard Erisey, of Erisey in Ruan Major, Cornwall, and Elizabeth, daughter of Peter Carew of Bickleigh; member of Committee on Petitions; J.P. for Devon 1654.

(f) Francis Rouse (1579–1659) of Landrake in Cornwall; fourth son of Sir Anthony Rouse of Halton in St. Dominick, Cornwall, stepfather of John Pym, executor of Francis Drake's will, and M.P. for Cornwall 1604; B.A. Broadgates Hall (afterwards Pembroke College), Oxford, 1597; graduated at Leyden, 1599; M.P. for Truro 1626, 1640 (twice), and 1654, for Tregony 1628, and for Cornwall 1656; provost of Eton College 1644; member of Derby House Committee, 1648; Speaker in this parliament and member of Council of State; J.P. for Devon 1647 and 1654; one of Cromwell's Lords 1656; published metrical version of the Psalms. (See D.N.B.)

(g) Richard Sweet, J.P. for Devon 1654; perhaps a citizen of Exeter, but cannot be fully identified; guarantor for Robert Davey, assistant clerk of the House in this parliament. (See *Notes and Gleanings*, I, 126.)

1654.

12th July, 1654.

Robert Rolle (a).
Arthur Upton (b).
Thomas Reynell (c).
William Morice (s).
John Hales (d).
William Bastard (e).
William Fry (f).
Thomas Saunders (s).
John Northcote (g).
Henry Hatsell (h).
John Quicke (k).

(a) Robert Rolle (c. 1620–1660) of Heanton Satchville, eldest son of Sir Samuel, M.P. for Devon 1641 [q.v.], and Margaret, daughter of Sir Thomas Wyse; admitted to the Inner Temple 1640; J.P. in 1647 and 1654; sheriff in 1650; recipient of a letter from General Monk in response to a Devon Restoration petition, January, 1660; M.P. for Callington 1660; married Arabella, daughter of the fourth Earl of Lincoln; ancestor of Lord Clinton.

(b) Arthur Upton (1614–1662) of Lupton in Brixham, son of John Upton, M.P. for Dartmouth 1625, and thrice subsequently; his mother was Dorothy, daughter of Sir Anthony Rouse, and half-sister both of John Pym and Francis Rouse, M.P. for Devon 1653 [q.v.]; member of Devon Parliamentary Commission 1643; J.P. in 1647 and 1654; married Elizabeth, sister of William Gould (1615–1644), governor of Plymouth.

(c) Thomas Reynell (1625–1698) of East Ogwell, eldest son of Sir Richard Reynell; J.P. in 1647 and 1654; M.P. for Ashburton 1659, 1679 (twice), 1681, and 1689; sheriff in 1677.

(d) John Hales, J.P. for Devon 1654; excluded in 1656; M.P. for Dartmouth 1660; perhaps of West Alvington, but cannot be fully identified.

(e) William Bastard (c. 1600–1663) of Gerston in West Alvington, son of William Bastard (c. 1570–1638), M.P. for Dartmouth 1601, and a learned lawyer; J.P. in 1647 and 1654.

(f) William Fry (1590–1672) of Yarty in Membury, son of Nicholas Fry and Mary, daughter of John Brett of Whitstanton; J.P. in 1654; married Mary, daughter of John Yonge of Colyton.

PARLIAMENT.

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for Plymouth 1660, but unseated on petition; married Alice, daughter of Sir Francis Glanville, M.P. for Tavistock 1614.

(c) John Doddridge (1610–c. 1665) of Barnstaple, son of Pentecost Doddridge and nephew of Sir John Doddridge; M.P. for Barnstaple 1646 and 1654; J.P. in 1647; recorder of Barnstaple; founded library at Barnstaple. (See Prince.) 1659.

18th January, 1659.

John Northcote (s).
Robert Rolle (s).

CHARLES II.

1660.

April, 1660.

George Monk (s).

John Northcote (s).

31st July, 1660.

Edward Seymour (s) *vice*
Monk, created Duke of
Albemarle.

1661–1679.

9th April, 1661.

Hugh Pollard (a).

John Rolle (b).

8th January, 1667.

Christopher, Earl Torrington
(c) *vice* Pollard, deceased.

28th February, 1671.

Coplestone Bampfylde (d)
vice Torrington succeeded
as Duke of Albemarle.

(a) Sir Hugh Pollard (c. 1615–1666) of Kingsnympton, second baronet, son of Sir Lewis Pollard and Margaret, daughter of Sir Henry Berkeley; fifth in descent from the Tudor judge, Sir Lewis Pollard; served against the Scots 1640, but expelled by the parliament 1641; succeeded as second baronet 1641; fought for the royalists in Devon and Cornwall; governor of Dartmouth 1645; taken prisoner 1646, and made submission; governor of Guernsey and comptroller of the household after the Restoration. (See D.N.B.)

(b) Sir John Rolle (1626–1706) of Stevenstone in St. Giles in the Wood, son of Andrew Rolle of Marra in Week St. Mary; created K.B. 1660; sheriff in 1682; probably a Tory in politics; married Florence, daughter of Dennis Rolle (1614–1638) of Stevenstone.

(c) Christopher Monk, Earl of Torrington (1653–1688) of Potheridge in Merton, son of George, Duke of Albemarle, M.P. for Devon 1653 [q.v.]; entered parliament

when under fourteen ; K.G. 1670 ; lord-lieutenant of Devon 1681 ; chancellor of Cambridge University 1682 ; raised Devon and Cornwall militia against Monmouth 1685 ; governor of Jamaica (where he died) 1687. (See D.N.B.)

(d) Sir Coplestone Bampfylde (1636–1691) of Poltimore, son of Sir John Bampfylde and grandson of John, M.P. for Devon 1628 [q.v.] ; M.P. for Tiverton 1659 ; an active supporter of the Restoration, and one of the earliest leaders of the Tory party. (See D.N.B.)

1679.

18th February, 1679.

Edward Seymour (a).

William Courtenay (b).

(a) Sir Edward Seymour (1633–1708) of Berry Pomeroy, fourth baronet, son of Sir Edward Seymour III, M.P. for Devon 1640 [q.v.] ; M.P. for Hindon 1661, for Totnes 1679 and 1695, for Exeter 1685 and seven times subsequently ; a leader of the Tory party ; sat in every parliament from 1661 to his death except that of 1681 ; Speaker 1673, re-elected 1678 ; again re-elected 1679, but refused by the King ; with Halifax opposed the Exclusion Bill 1680 ; threatened with impeachment by the Commons 1680 ; succeeded to baronetcy 1688 ; joined William of Orange 1688, but opposed offer of crown to him ; member of Cabinet 1692–1694 ; accused of corruption but escaped censure 1695 ; comptroller of household 1702, but dismissed 1704 ; ancestor of the later Dukes of Somerset. (See D.N.B. and Macaulay's *History of England*.)

(b) Sir William Courtenay (1628–1702) of Powderham, first baronet, son of Francis Courtenay, M.P. for Devon 1625 [q.v.], and Elizabeth, daughter of Sir Edward Seymour II, M.P. in 1621 [q.v.] ; created baronet 1644, but, being claimant of dormant peerage, never used the title ; a royalist, and in later years a Whig ; M.P. for Ashburton 1660 ; received William of Orange at Ford on his way from Brixham to Exeter ; inherited Fitzford and Walreddon from Lady Howard, his cousin ; married Margaret, daughter of Sir William Waller, the parliamentary general. (See *Lady Howard of Fitzford in Trans.*, XXII, and Ezra Cleaveland's *Noble House of Courtenay*.)

1679–1681.

2nd September, 1679.

William Courtenay (s).

Samuel Rolle (a).

(a) Samuel Rolle (1646–1719) of Heanton Satchville in

Petrockstow, son of Robert Rolle, M.P. for Devon 1654 [q.v.], and Arabella, daughter of fourth Earl of Lincoln ; a Whig in politics ; M.P. for Devon five times between 1689 and 1701, for Callington 1701 and six times subsequently ; his daughter Margaret married in 1724 Robert Walpole, son of the Prime Minister, lord-lieutenant of Devon, and later second Earl of Orford.

1681.

1st March, 1681.

William Courtenay (s).

Samuel Rolle (s).

JAMES II.

1685-1687.

7th April, 1685.

Bourchier Wrey (a).

Coplestone Bampfylde (s).

Samuel Rolle was a candidate at this election, and petitioned against the return, but, like other defeated Whigs in 1685, he failed to obtain a decision.

(a) Sir Bourchier Wrey (1653-1696) of Tawstock, son of Sir Chichester Wrey of Trebigh in St. Ives, Cornwall, and Anne, daughter of Edward, fourth Earl of Bath ; created K.B. 1661 ; succeeded as third baronet 1668 ; served under the Duke of Monmouth at the siege of Maestricht 1676 ; a Tory in politics ; M.P. for Liskeard 1678, 1689, 1690, and 1695 ; fought duels with Thomas Bulkeley, M.P. for Beaumaris, and James Praed, M.P. for St. Ives, by the latter of whom he was seriously wounded. (See D.N.B.)

Summary :—19 parliaments, 26 returns for Devon (of which 7 are by-elections), 68 names, and 44 separate individuals.

III. INDEX OF NAMES.

The number of times elected for Devon is prefixed to each name, and the date of the first election is appended.

- (1) Acland, Sir John, of Broadclyst (1607).
- (2) Bampfylde, Sir Coplestone, of Poltimore (1671).
- (1) Bampfylde, John, of Poltimore (1628).
- (1) Bastard, William, of West Alvington (1654).
- (1) Carew, John, of Antony in Cornwall (1653).
- (1) Courtenay, Francis, of Powderham (1625).
- (3) Courtenay, Sir William, of Powderham (1679).
- (1) Doddridge, John, of Barnstaple (?) (1656).
- (1) Drake, Sir Francis, of Buckland Monachorum (1628).
- (4) Drake, John, of Musbury (1614).

- (1) Erisey, James, of Bickleigh (1653).
- (1) Powell, Edmund, of Calstock in Cornwall (1656).
- (1) Fry, William, of Membury (1654).
- (1) Fulford, Sir Francis, of Dunsford (1625).
- (1) Giles, Sir Edward, of Dean Prior (1614).
- (2) Hales, John, of West Alvington (?) (1654).
- (2) Hatsell, Henry, of Plympton St. Mary (1654).
- (1) Martyn, Christopher, of Plympton ~~St.~~ Maurice (1653).
- (1) Martyn, Sir Nicholas, of Kenton (1646).
- (1) Monk, Christopher (Earl Torrington), of Merton (1667).
- (2) Monk, George, of Merton (1653).
- (3) Morice, Sir William, of West Putford (1648).
- (4) Northcote, Sir John, of Newton St. Cyres (1654).
- (1) Pole, Sir John, of Shute (1626).
- (1) Pollard, Sir Hugh, of Kingsnympton (1661).
- (1) Quicke, John, of Newton St. Cyres (1654).
- (2) Reynell, Thomas, of East Ogwell (1654).
- (1) Ridgeway, Sir Thomas, of Tormoham (1604).
- (1) Rolle, Sir John, of St. Giles in the Wood (1661).
- (3) Rolle, Robert, of Petrockstow (1654).
- (1) Rolle, Sir Samuel, of Petrockstow (1641).
- (7) Rolle, Samuel, of Petrockstow (1679).
- (1) Rouse, Francis, of Landrake in Cornwall (1653).
- (3) Saunders, Thomas, of Plymouth (?) (1653).
- * (3) Seymour, Sir Edward I, of Berry Pomeroy (1593).
- (1) Seymour, Sir Edward II, of Berry Pomeroy (1620).
- (3) Seymour, Sir Edward III, of Berry Pomeroy (1640).
- (1) Seymour, Sir Edward IV, of Berry Pomeroy (1679).
- * (2) Strode, Sir William, of Plympton St. Mary (1597).
- (1) Sweet, Richard, of Exeter (?) (1653).
- (2) Upton, Arthur, of Brixham (1654).
- (1) Wrey, Sir Bouchier, of Tavistock (1685).
- (2) Wyse, Thomas, of Marystow (1640).
- (1) Yonge, Sir John, of Axmouth (1656).

Of the forty-four members in this list Seymour I achieved two elections, and Strode one, in the parliaments of Elizabeth, Samuel Rolle the younger five in those of William III. Adding these eight to the sixty-eight returns in the Schedule, we get the total of the numbers in the brackets, seventy-six.

* Also indexed in Part IV (*Trans.*, XLVII, p. 370).

KAIRPEN-HUELGOIT; WHICH IS CALLED EXETER.

BY JOHN MAY MARTIN, C.E.

(Read at Plymouth, 20th July, 1916.)

THE most striking event in the traditional history of Exeter is the siege of the city by Vespasian towards the close of the first half of the first century of the Christian era, now nearly two thousand years ago. The famous Roman general had beleaguered the city for eight days when the siege was raised by the arrival of the British general at the head of a relieving force.

Professor Freeman, referring to this momentous event in his *History of Exeter* (p. 10), tells us that "Exeter, by the name, not of Isca but of Penholtkeyre, was one of the most ancient cities of Britain. The alleged name is a singular mixture of Welsh and English; but something must have given rise to it. The legend tells how, after the death of Claudius, Arviragus threw off the Roman yoke, how Vespasian, sent to win back the land, was beaten back by the British king; how he landed at Totnes, made his way to Penholtkeyre, and besieged the city, but being again baffled by Arviragus, betook himself by way of Bordeaux and Rome, to the easier conquest of Jerusalem. All this was in the fifteenth century believed of some and doubted of others. There was a real Arviragus somewhat later in the time of Domitian, but it is more likely that his name was put in by some improver of the story than that any historical campaign between him and Vespasian lurks in the legend. The story comes from Geoffrey of Monmouth, but legend and coins alike connect the names of Isca and Vespasian, and the slight notices that history gives of his British exploits may lead us to believe that it was he who, while Claudius reigned, made Isca an outpost of Rome. But this is as far as we dare go."

And this is a great deal further than history will take us, for there is not a tittle of evidence, outside Geoffrey's, that brings Vespasian within sixty or seventy miles of Exeter, and as for coins bearing his name they have been found in Exeter in great numbers, but could not have been minted for more than twenty years after the siege, when he had become emperor. There is also some ambiguity in the passage as it stands. It is said that it was not until after the death of Claudius that Arviragus threw off the Roman yoke, and yet that is whilst Claudius reigned, that Vespasian made Isca an outpost of Rome. But if we look upon this as a printer's verbal error and make the passage read that it was not until the departure, instead of the death, of Claudius from Britain, everything becomes clear.

Then again—with regard to Freeman's doubt about Arviragus: he does not appear to find anyone of that name about that period, and suggests that there was a real Arviragus somewhat later in the time of Domitian (A.D. 81–96), and seems to have had no suspicion that the Arviragus of Geoffrey was, as Dr. Oliver had rightly supposed, Caractacus himself (*History of Exeter*, p. 1); Arviragus being one of the titular names of Caractacus and meaning High King or King Paramount.

John Vowell, *alias* Hoker, uncle of a more famous nephew, and first Chamberlain of the city, much cherished the story of the siege of Penholtkeyre, and produced it, varied, on various occasions (A.D. 1583–87), as three ancient names of Exeter, Penhulgoite, Pennehaltecaire and Pennecaire; and John Shillingford, the indomitable and patriotic mayor of Exeter in 1477, claimed as the most ancient name of the city the second of these forms of the name, clerically varied by him to Penholtkeyre.

The belief in Vespasian's siege of the city under that name continued with the citizens and was cherished by them as one of the dearest memories of their ancient city. John Gidley, who was the Town Clerk of Exeter when the British Archæological Society held its congress there in 1861, read a paper before that meeting in which he said that Exeter was called by the Britons in their tongue by sundry names, the first Penhulgoite, that is to say, the prosperous chief city in the wood. It was also called Pennehaltecaire, that is the chief town or city upon the hill. Mr. Gidley, who in his official capacity had charge

of the city archives, would seem from his use of sundry archaisms such as "citie" and "walles" to have made use of them in the preparation of his paper.

A later instance of the use of Penholtkeyre as a synonym for Exeter occurs in a paper written for the meeting of the Royal Sanitary Institute at Exeter in 1913 by Mr. H. Tapley-Soper, F.R.HIST.SOC., the City Librarian, in which occurs this assertion: "Exeter claims prescriptive origin as a city. It has been the site of a continuous settlement since its occupation by the British under the name of Penholtkeyre."

And it was under the name of Penholtkeyre that the Exeter cyclists in their annual carnival in 1909 represented the siege of the city in a pageant, which, beginning with an exhortation from the Arch-Druid to the citizens to be prepared for great events that were at hand, culminated in the marriage of Genwissa, otherwise Claudia, daughter of the Roman emperor Claudius with the British King. All this, although perhaps not strictly in accordance with history, as all historical pageants should be, was highly pleasing to the audience and was enthusiastically acclaimed, as, considering that the originator and contriver of the display was an Exonian, whilst all the performers were his fellow-citizens, it richly deserved to be.

But whilst it was the popular belief that Exeter was the besieged city there were some who, because of having greater opportunity for the study of the subject, had their doubts respecting it. The Bishops and Chapter in their great suit with the Mayor of the City respecting jurisdiction in the Cathedral Close "seyen that thei doute of Vespasian being atte Exeter." Risdon, our county historian, roundly expresses his incredulity thus: "I believe it (Exeter) was never begirt with the forces of Vespasian, nor do I think known to him." And Dr. Oliver on the first page of his *History of the City of Exeter* says: "Whether there is sufficient authority . . . for the assertion that Vespasian besieged this British city may be fairly questioned."

Inquiry leads men to doubt; and to hold fast our belief in any historical fact we should ask no questions about it; and so such doubts as there were continued to remain as doubts, because to convert doubt into certainty it was necessary to discover where, if not at Exeter, the real Penholtkeyre was to be found.

An attempt to discover the whereabouts of this mysterious city was made by Sir W. Camden in the year 1587. Adapting the vagrant name to his own purposes, Camden supposes that the true reading may have been "Pont-Ivel-Coit," and that it means Ilchester, as "Pons-ad-Ivell in Sylva," or, the Bridge on the Ivell in the Wood. But his faith in this interpretation is far from settled, for when he is describing Cornwall he says that it was Lost-withiel, or the adjoining height of Restormel that was called in the British histories Pen-Vehel-Coit, or the lofty hill in the wood, which some will have to be Exeter. When, however, he treats of Exeter itself he retains among its ancient names Pen-cair, being the same name in one of its varieties. Thus he either makes the names to have belonged to three different places or leaves the choice of its place to his readers. In either case he admits that the certain place had yet to be found.

Defoe (*Tour*, Vol. I, p. 330) says that "Exeter is a city which hath often changed its name; for it was the Pen Caer, and Caer Eske of the Britons; the Augusta of the Romans; the Isca of Ptolemy; the Isca Damnoniorum of Antonine; the Exanceaster of the Saxons, which was afterwards abbreviated to Excester and Exeter."

Camden was followed by Archbishop Usher, who produces the name from the other ancient authority the Nennian Catalogue of Cities . . . where it appears as Pensauelcoit. The name of Exeter does not appear in this list in any recognizable form, and its omission is very remarkable.

Geoffrey of Monmouth, whose *Historia Britonum* became the text-book from which later writers derived their inspiration, was an important person in ancient British literature, nevertheless but little seems ascertained respecting him save that he was nephew to Uchtryd, bishop of Llandaff; was himself appointed bishop of that place in 1152, and died the same year.

His great work, the *Historia Britonum*, professes to be a translation of an old British chronicle brought over from Brittany by Walter Cadenius, archdeacon of Oxford, by some supposed to be the same person as Walter de Mapes, the poet.

Geoffrey's history relates the legendary story of the British kings, from Brutus, the great-grandson of Æneas, to the death of Cadwalladr, son of Cadwallo, in A.D. 688.

The lively Welshman keeps his country's traditions free from those rationalizing attempts which spoil a good poem without making a good history ; and he provided for the romance writers some of their best stories, among the rest, that of Arthur and the Knights of the Round Table.

Those of the inhabitants of this island in British or Roman-British times who were versed in letters, whether they were priests, or whatever position they occupied among their countrymen, may readily be supposed, like the thoughtful and reflective minds of all ages, to have chronicled the passing events of their day and to have recorded their meditations on those that had gone by.

Such a man was Tysilio who wrote a History or Chronicle about the year 1000, which is commonly referred to as Brut Tysilio, or the Chronicle of the Kings. Besides the state and condition of Britain in the reign of Æthelstan, who died in the year 940, are referred to therein in kind of historical retrospect, which may justify us in inferring that a lapse of fifty or sixty years had taken place subsequently ; and that will bring us down to the year 1000, which has been selected as the period when the Chronicle was written.

The manner in which this British History or Chronicle was published was as follows : at some period before the year 1147, Geoffrey of Monmouth became possessed of an ancient British chronicle brought to him from Brittany, which, if not the same as the *Chronicle of Tysilio* preserved in Jesus College, appears to be in all probability a varying copy of it. It was brought over by Walter Calenius, archdeacon of Oxford, by some supposed to be the same person as Walter de Mapes the poet, which is, however, somewhat uncertain.

However, Geoffrey determined upon publishing it, and a copy of Merlin's Prophecies coming also into his hands, he published both. He took a most unwise course ; Latinizing the names, making various additions and embellishments of his own, and uniting Merlin's Prophecies to his volume, which is to be regarded as having formed no part of the original. Having done this and loaded the narrative with many additional fictions, he strongly protests its truth. The day is now past to talk of forgeries of Geoffrey of Monmouth, as it is very clear that he was only an injudicious editor, who, while he introduced some few additional circumstances from then existing documents

or traditions, and various alterations of names, gave way to his propensity for romance by adding still more to the already numerous fictions of the original, and causing in many respects even a further deviation from the truth.

The British account of Vespasian's expedition as given by Tysilio is that he, with a large fleet, first attempted to land at Thanet (Richborough), but being repulsed by the British King or General Gweyrydd or Arviragus—better known to us through the Romans as Caractacus—with a numerous army, sailed to a port, constantly mentioned for other landings in these British Chronicles, and in the earliest known text called “*draeth talnas*”—though afterwards corrupted to “*y draeth Toynus*,” and “*y traeth twtneis*”—and having landed, marched directly to besiege a place which in the various texts appears as *Caer Benhwelgoet*, *Chaer Penhwylgoet*, *Kaerpen-Huelgoit*, and other kindred forms of orthography.

The British story then goes on to say that after seven days, Gweyrydd by land overtook Vespasian at that place, and commenced a bloody but unsuccessful battle in which he was overpowered by the number of the Romans, but not so much conquered as that he compromised the contest by an alliance with the emperor's daughter Genwissa, and that thus the foreign sway was confirmed.

The Roman account of Vespasian's expedition is much more explicit. The narrative is that Vespasian, on his apparently second expedition, fought thirty battles (Suetonius says thirty-two), and subdued to the Roman dominion two most powerful peoples or nations, twenty (Eutropius *more* than twenty) towns (or hill-cities? “*oppida*”) and the Isle of Wight close to Britain. A distinction between the island and the mainland worthy of notice.

The British story omits all this and implies that Vespasian immediately upon his landing on Totnes shore marched straight to Exeter without experiencing any opposition on the way, and here comes in Geoffrey's famous gloss, the phrase reading—and marched upon *Kairpenhuelgoit* “*which is called Exeter*.” (*quæ Exonia vocatur*). Now the distance from Totnes to Exeter is only about twenty-five miles and no room is afforded for these important military achievements: besides, whatever Vespasian's object in getting possession of the city of Exeter might have been, it would have been achieved

more readily by simply sailing up the Exe to the town direct; thereby ensuring his ships from danger of wreck on the "Totnes shore," and sparing his troops from possible opposition during their five-and-twenty mile march with their necessary impedimenta, weapons, etc., from the place of their landing to the city of Exeter.

It has been observed (p. 341) that the doubts concerning Exeter having been known as Penholtkeyre lasted down to recent time, and for the simple reason that in order to dissipate them the location of the real Penholtkeyre should be ascertained.

This happened in 1877 when a remarkable book, entitled *A Primæval British Metropolis*, was given to the world by Mr. Thomas Kerslake, a printer and antiquary of Bristol; who at one time went to school at Exeter, and is believed to have been a native of the city. He was a man of indefatigable research in the older history of the Western Peninsula, and from time to time published the result of his investigations. Four years before the appearance of the *Primæval Metropolis* he read to the Exeter meeting of the Royal Archæological Society his remarkable and most interesting paper, "The Celt and the Teuton in Exeter," of which Professor Freeman and Mr. J. R. Green made use in the ethnical parts of their respective works.

Mr. Kerslake's style is too discursive and involved for free quotation here, but Mr. R. N. Worth, who reviewed the work in 1880, put the matter in a nutshell towards the end of his paper on the "Myth of Brutus the Trojan," read at Totnes in that year, and printed in our *Transactions* on p. 568. The gist of Mr. Worth's remarks is as follows:—

Now, Mr. T. Kerslake, who has applied himself with singular acumen to the unravelling of sundry knotty points of our ancient history, is inclined to hold that the Totnes of the Chronicles is a distinct place (from the Totnes shore); and he has pointed out that the Welsh Chronicles contain "early forms of this favourite British port that has got to be confounded with Totnes."

In the *Brut Tysilio*, for example, the place of the landing of Brutus is called "Talnas" (at least this is the printed form given in the *Myvyrian Archæology*); *Brut Gr ab Arthur* reads "Totonys"; and in a third, the *Hafod Chronicle*, we have "Twtneis." Mr. Kerslake, therefore, treats Talnas as the earliest form of the word, and thereon

builds the hypothesis that the name given by the British writers to their port would resolve itself into "ʔ-Aln-as"; and if Christchurch Haven should be conceded to be Ptolemy's estuary of Alaunus, it would also be the port called by the Britons ʔAlor or ʔt-aln-as, from which Vespasian advanced up to Alauna Sylva or Pensauelcoit—the City in the Head of the High Wood.

There can be little doubt, I think, that Mr. Kerslake is right in regarding Penselwood as the site of *Caer Pensauelcoit*, given as *Exeter* by Geoffrey of Monmouth, not apparently on the authority of his British original, but, as in other cases, for his own gloss, and thenceforward cherished most fondly as one of the worthiest memories of the "ever faithful" city by its chief men and antiquaries.

"If it was at Totnes town, or in Torbay, into which some critics have expanded the idea of the 'Totonesium litus,' that Vespasian landed immediately before his siege at 'Kairpen-Huelgoit,' then there is considerable force in Geoffrey's comment, '*quæ Exonia vocatur*.' If Penselwood, on the borders of Somerset, Dorset, and Wilts, were this 'Primæval British Metropolis,' then we must give up the idea that Vespasian landed at Totnes town, or anywhere in its vicinity."

Mr. Worth's inclination seems to be to agree with Mr. Kerslake, but still he has an "if" or two in his mind; but when, eleven years later, in 1891, he delivered his famous Presidential Address to the Association, he had cast aside his incertitude and declared that "the late Mr. Kerslake had dealt a crushing blow at the integrity of this myth, which was really built on no sounder foundation than the pardonable pride of Hoker, developing the statement of Geoffrey of Monmouth, that Vespasian sailed to the Totnes shore (Totonesium litus), and marched upon Kairpen-huelgoit, 'which is called Exeter' (*quæ Exonia vocatur*).

"Suetonius gives no clue to the locality of the conquests of Vespasian beyond the statement that the Isle of Wight formed part of them. Mr. Kerslake points out that the words '*quæ Exonia vocatur*' are probably the gloss of an 'editor' of Geoffrey; and that even if traceable to Geoffrey, they do not occur in the original Welsh chronicles, *Brut Tysilio* and *Brut Gr ab Arthur*, whence he drew. All these say that Vespasian marched upon Kairpenhuelgoit. How then did Exeter get into the narrative? Assuredly

not by tradition, running through ten centuries and more. The answer lies in the statement that Vespasian landed at Totnes, and the identification of the Vespasian Totnes with the Totnes which we know.

“ But the Totnes of the elder Chronicles is not a town at all. It is the Totnes ‘ shore,’—*litus* in Latin, *traeth* in Welsh. Even this is short of the limits of corruption. In its earliest form the word is not even Totnes but Talnas (as in the account of the landing of Brutus in the *Brut Tysilio*). Mr. Kerslake suggested Christchurch Haven as Ptolemy’s estuary of Alaunus, and the place whence Vespasian advanced on Kairpenhuelgoit, or Caer Pensauelcoit, which is precisely represented in modern English by Penselwood on the borders of Somerset and Dorset.”

Later still, in 1895, Mr. Worth wrote these emphatic words in his *History of Devonshire* (p. 5): “ The long-accepted story of Roman conquest and sway in Devon rests solely upon a mistaken identification and a forgery. The false identification is the gloss of Geoffrey of Monmouth, or one of his editors, that the Caer Pensauelcoit which Vespasian besieged was Exeter, instead of Penselwood, on the Wilts and Somerset borderland. The forgery is the Chronicle attributed to Richard of Cirencester.

“ There is thus no evidence that the Dunmonii were ever conquered by the Romans ; and the conclusion of Mr. Beale Poste appears irresistible—that ‘ they retained their nationality under their own native princes.’ ” Mr. Worth first noticed Mr. Kerslake’s *Primæval British Metropolis* in 1880 and his writing of this phrase fifteen years afterwards shows how his matured opinion confirmed his earlier impression.

The early history of Exeter remains to be written—also the wider one of Devon. All that is commonly known of either has been told by men who have followed Geoffrey of Monmouth’s history in the matter of Vespasian’s siege of Exeter, and taken as gospel truth the three crucial words (quæ Exonia vocatur) of the gloss which are only found in his later editions—and nowhere else.

If we pause for a moment to consider the why and the wherefore of this gloss the time will not be lost : it will help us to see how the story got turned into a wrong groove, one from which it has only just now been extricated.

The interpretation of a gloss is given by Canon Taylor

in his History of the *Transmission of Ancient Books to Modern Times*. "Many Manuscripts"—Geoffrey's History was necessarily a manuscript, for the first printing press in England was not set up in Westminster until more than three centuries had passed, and manuscripts had been copied over and over again during that period—"Many manuscripts have marginal notes added evidently by later hands, which through some incidental allusion to persons, events or particular customs, or by the use of peculiar forms of expression, indicate clearly the age of the notes, and therefore carry that of the original manuscript somewhat higher.

"The assumption of short marginal notes into the text appears to have been a frequent source of various readings. When such notes supplied ellipses in the author's language, or when they conduced much to the perspicuity of an obscure passage, the copyist would be very likely to incorporate the exegetical phrase rather than it should be lost to the reader or should deform the margin."

Neither the Roman nor the British accounts suggest the purpose of Vespasian's descent upon Exeter, neither do they make any mention of Penselwood, the true Penholt-keyre, but it is to be believed that he had some object beyond that of mere conquest. When Aulus Plautius in his campaign of A.D. 43 had conquered the Dobuni and marched through their country in pursuit of the retreating Britons, he left its government in the hands of a native prince whom he had chosen from amongst his fellows to hold the kingdom against the warlike Silures who inhabited the country about Gloucester.

In this year, A.D. 47, Plautius went to Rome to receive his Ovation ; and it might well have been that the Dobunian prince had taken advantage of his absence to rebel against the Roman rule, and that a part of Vespasian's business was to quell the rebellion and reduce the leader to his former state of submissive fealty.

Although this may have been his primary object, Vespasian probably looked further afield. He must have known the mineral wealth of the Mendip lead mines by repute, if not personally ; his own eyes had seen the rich fertility of the Vale of Gloucester, and he had no doubt learned in the four years that had passed since his previous campaign of the inexhaustible iron mines of the Forest of Dean.

In those days the west of the island contained its principal supplies of minerals. Lead was mined in Derbyshire and North Wales, and iron was smelted in Sussex, but the variety and the amount of the valley of the Severn and the forest beyond gave that region an economic preponderance over the rest of the island.¹

The Mendips, with their inexhaustible stores of lead, formed a metallic centre comparable only to the exhaustless tin region of Devon and Cornwall. Tin, an absolute necessity for the Mediterranean civilization, both for weapons and ornament, was brought from the Western Peninsula, and carried in wagons to the eastern ports of shipment along a road which Vespasian would reach if he went a couple of miles further north than Penselwood. A recent writer, Mr. Edward Conybeare, in his *Roman Britain*, at page 36, has given a verbal sketch of the line of this road, which, coming up from Exeter, the great tin emporium, passes along to the eastward about two miles north of Penselwood. "It is," he says, "often traceable, and to be seen almost in its original condition near Alfred's Tower, three miles north of that village, passing which the road, here known as 'The Hardway,' goes on to Old Sarum and along the North Downs to the port of shipment. The hard dry back of these chalk highlands furnished a dry and open road much easier for the tin-laden wagons to travel upon than the swamps and forests of the lower ground."

Another writer says that that part of the road between Stonehenge and Farnham used to be called the Harroway. This was abandoned when the Pilgrims began to use a shorter and more direct road from Winchester to Canterbury.

No doubt this was the road in use in the time of Posidonius, who visited Britain about 100 B.C., and who wrote as if he might have seen the tin-wagons travelling along it for himself. He thus anticipates the statement made by Cæsar more than half a century later, that tin reached Kent from the interior, i.e. by land. In all likelihood improvement may have been made in the condition of the road in the interval.

Coming down the Channel to land either on the Totnes

¹ The earliest known Roman inscription found in England is one of A.D. 49 on a pig of lead found at Wokey Hole in the Mendips near Wells.

shore or in Christchurch Harbour Vespasian must necessarily pass the Isle of Wight, the north coast of which abounds in harbours where he might safely anchor his ships. The westernmost of these, the estuary of the Yare, has between it and the Needles some high ground whence the mouth of Christchurch Haven lies invitingly open, not more than eight miles distant.

One of the rivers which disembogue in this estuary is the Dorsetshire Stour, whose fountain heads rise in the bosom of the hill on which the village of Penselwood stands. Overhanging the river as its course is ascended many formidable hill-forts are passed—very different from the insignificant earthwork on Little Haldon—of these the chief to be seen at the present day are Badbury Rings, Buzbury, Hod Hill, and the formidable double entrenchment on Hamildon Hill ; there are others whose outlines are obscured by plantations, but the total number would fall far short of the twenty or more mentioned by the Roman historian.

The force with which Vespasian won his way from his landing place at the mouth of the Stour to its source was a strong one. He had his own legion, the famous Second, which he had brought over from Germany, and was spoken of by Tacitus as connected by its high services in such a way as shows that no other legion had been in the like manner connected with him. With this legion, almost as a matter of course were its auxiliaries, equal in number to it ; and the whole would thus be 13,000 men.

This choice body of the most perfect soldiers the world could produce seem to have had their work cut out for them, for it took them the greater part of two years to win their way through from Christchurch Harbour to the springs of the Stour. The phrase of the Roman historians which says that Vespasian fought thirty battles requires modification, for the site of none of them can be located ; the fact being that the under-trained Britons had to give way before the renowned Veteran Legion and to fight what nowadays is called a rearguard action for the whole seventy miles from the mouth of the Stour in Christchurch Harbour to its sources in the bosom of the Penselwood promontory.

“The Senate of Rome conferred the honour of an Ovation or Triumph with the title of Imperator on their victorious generals . . . but chiefly on the emperors themselves, as

all generals were supposed to act under their auspices" (Adam's *Roman Antiquities*, pp. 18 and 136).

Claudius assumed five new Imperatorships for victories in the year A.D. 45, and these, it is hardly doubtful, were assigned for the victories of Vespasian over the Belgæ and Dumnonii.

Claudius had an increased number of Imperatorships compared with previous emperors ; but still this did not record every victory, but only the most important. We accordingly see that only a small part of Vespasian's victories were thus commemorated, for Eutropius says in his History, vii, 19, that he fought with the enemy thirty-two times in Britain, which, deducting five engagements which took place in the two first years of the war, with Aulus Plautius and Claudius, still leaves twenty-seven times, but there appear to be only six recorded. Thus some of the victories were such as Claudius did not think worthy to be added to his titles ; to say nothing that various of the battles may not have been victories but defeats.

Tacitus alludes to the Roman practice of celebrating all actions indiscriminately, and says : " Again were they (our legions) driven back ; and in recent times we have celebrated triumphs rather than won conquests over them " (*Agricola*, xxxvii, 115).

Two years before Kerslake produced his *Primæval British Metropolis* I had occasion to visit Penselwood to inspect and report upon the improvement of some land belonging to a gentleman named Parsons, who resided at Charlton House, half a dozen miles to the south-east. My report having been adopted the work was put in hand and completed the same summer. During its progress I frequently went to inspect it, being generally accompanied by Mr. Parsons. He, though no antiquary, was acquainted with the lore of the district and told me of the battles that had been fought there in olden times, and of a remarkable series of excavations known as Pen Pits which were the subject of great curiosity to the antiquarian world. These of course I much desired to inspect, but I always found that I had no time for such investigation as I thought the subject demanded and the opportunity was lost.

Not having the necessary antiquarian receptivity in those days I failed to grasp the possibilities of the bold headland facing us as we drove from Wincanton and up

which we climbed to the village, but they were fully appreciated when I had read Kerslake's book. Any description therefore I might now write would be from a recollection dimmed by the passage of forty years of a busy life, but as Kerslake's description confirms my own impression I will make such use of it as will suffice for the present purpose ; I am now using the *Caer Pensauelcoit*, which was written in November, 1881, five years after the *Primæval British Metropolis*.

The tract of land under consideration is a large peninsular eminence, chiefly occupied by the parishes of Penselwood, Somerset, and Stourton, Wilts, including the Park of Stourhead. From a distance, Penselwood Church (St. Michael) is visible near the south-western quarter, and Stourton or Alfred's Tower is very conspicuous on the north-western point. It is bounded on all sides, except the east, by a lofty and precipitous natural escarpment said to be over 800 feet above sea-level. The eastern side is not precipitous, and there is a broad valley between it and the chalk heights beyond Mere. This high chalk range, extending eastward towards the Wily about Heytesbury, is covered with traces of British occupation, and its western point, towards the Penselwood and Stourton promontory, is surmounted by a large and strong entrenchment, called White Sheet Castle. On the north-east the promontory has an isthmus connecting it with the heights of Selwood, and "Penselwood" continues in its name a record that it is the abrupt southern termination of this range, which is, in fact, the backbone of the Forest of Selwood and the natural frontier of Wilts and Somerset.

The southern part of the promontory is an open platform called Penridge, overlooking the Great Vale of Blackmore, and its natural escarpment has been increased by an artificial acclivitation of great height. At the angle formed by this front and the eastern side there is a gorge by which the river Stour issues from the interior, and the passage is defended by a little internal fortress which is known as Castle Orchard, described as one of that kind of strongholds that are somewhat comet-shaped, with a separately inclosed and elevated keep at the outer end. This keep which is circular is very strong, and immediately overhangs the river and closely bars the valley. Behind the keep is an oblong sort of outer bailey, also strongly and separately fortified, and extending away from it into the

midst of one of the largest of the remaining groups of pits.

To the natural elements of position and of external strength or impregnability are added what are rarely or never else found combined with them, those of shelter and even comfort, and what is more an unlimited supply of the purest water. How such hill fortresses as Old Sarum, Maiden Castle, and many others obtained a supply of water for the garrison and their other inhabitants is an archæological problem which remains unsolved.

Besides the abundant flow of water from its interior, the river Stour, there are two geographically notable rivers which spring from its exterior and fall into the two opposite seas. The Wily, after a wide circuit, falling into the Salisbury Avon, rejoins, at its mouth, in Christchurch Haven, the Stour, which had also started close to it herefrom. Here also rises the Brue, which runs by Glastonbury, through the great northern Somersetshire Level, to the Severn Sea.

Except towards the north-east, where the view is limited by the heights of Selwood and the great eastward chalk ridge, the prospects, from the elevations which bound its basin, are almost unlimited in every direction. On each side, south and north-west, the two seas, the English Channel and the Bristol Channel, are almost, or as it is believed, actually in sight. To the north the view includes the heights around Bath, and for some distance the ridge of the Wansdyke, passing south of that city, actually makes the sky-line, except where overcapped by Lansdown beyond, from which Alfred's Tower is in full view—is, in fact, a very prominent object from two such distant points as Lansdown and Windwhistle Hill by Chard ; as it is also from the great camps or hill-cities around Warminster, as Bratton and Battlesbury. To the west and south, a great extent of Somerset and Dorset reaches to the great range of hills north of Dorchester.

It is indeed too much to ask us to believe that a people, who held every coign of vantage throughout the land, were blind to the far greater resources of this remarkable district. The place is indeed the centre and key of the territories that are now known to us as the shires of Dorset, Somerset, and Wilts, which here touch each other. These three counties would have formed a compact large territory south of the Severn, with strongly marked natural frontiers ;

and these three county names bear in their ending "sæte" a noteworthy uniformity left upon them by the earliest West Saxon settlers, which seems to indicate a contemporaneous settlement of them by three earlier peoples, to whose former names this must have been a suffix by the intruders. Of one of them, the "Dornsæte," it certainly was the British name thus differenced. It is therefore likely that the present three counties continue to our time the boundaries of three provinces or tribes of the older invaded nation, which had in British times acknowledged this strong spot, where they touch each other for their capital ; and that when the barbarian invaders possessed themselves of the three provinces of our British capital, they contented themselves with being called the settlers in each of them.

It is also quite consistent with this that Christchurch Harbour, with its open mouth, opposite and in sight of the Isle of Wight, was the port of the mainland which invited the Roman invader desiring to stretch his grasp across the south-western peninsula of Britain. This bay of Christchurch is the estuary of the Stour ; the Alaunus of the old geographers ; the Talnas=t'alnas of the British Chronicle, at the source of which river we have found the *Caer Pensauelcoit*, also of the British writers. The valley of this river, flanked by the hill-fortresses Hengistbury Head (at the mouth of the harbour), Badbury, Hod Hill, and Hameldon—some of the twenty "oppida" of the Roman writers—leads directly up to the great city where Vespasian's incursion culminated. "It is believed that one, or at most two, telegraphic stations would have maintained communication from Wight to the *Caer* itself." This, of course, means signalling by beacon fires, smoke, or various kinds of semaphores used in those days.

The area comprised within the elevated border of this natural fortification is about 4 miles in length from north to south and about $2\frac{1}{2}$ miles in breadth from east to west—about 6000 acres.

Stour Head House, the home of the famous antiquary, Sir Richard Colt Hoare, stands about midway on its eastern side south of it, and adjoining the beautiful grounds by which it is surrounded there is a large tract of land forming the strongest possible contrast to them. It is not merely a naturally wild or barren tract, but rather a Ninevitic desolation. It is evident, at a glance, that its

present surface has been at some time modified by the labour of an immense number of human hands, directed by some motive common to them all.

A large part of this area is still covered with thousands of open pits, mostly dug in that gravelly soil which caps so many of the higher table lands in this part of England. These pits are of various sizes, with spaces about sufficient for a good path between them. Some very considerable portions have, however, been levelled and cultivated in recent times, with a success which offers a high premium to the speedy obliteration of the whole monument. This process of obliteration is rapidly going on in another direction ; so that any one approaching will hardly fail to meet a train of five or six carts, loaded with the larger stones picked out from the gravel, being carried to mend the roads for miles around. Of this stone also, from these old workings, have been built the Norman church and the village of Penselwood, and the houses and fences throughout the district.

Mr. Kerslake's claim for Pen Pits as the shrunken vestige of his Metropolis was warmly contested. In the volume of the Somersetshire Proceedings for 1856-7 is a paper by the Rev. F. Warre, the explorer of the walls and pits of Worle Hill, and the explainer and classifier of the West of England earthworks. He begins by calling the Pen Pits the "Crux of Antiquaries." Afterwards he transcribes Sir R. C. Hoare's earlier account in 1810, but altogether dissents from his surmise that the pits had been dwellings. He says that "they are so extensive that, had this been the case, they would have afforded accommodation for the inhabitants of the whole island, instead of those of one district." But in his next two pages he tries to account for the immense number and extent of the excavations by suggesting that it may have been a great factory of querns or hand mills taken away probably to a considerable distance.

An amount of feeling had been imported into this matter by the Somerset society, who took umbrage from the fact that Kerslake had not made his *Primæval British Metropolis* a contribution to their Proceedings, but a separate publication at his own expense and edited by himself. In July, 1878, the year after that publication was issued, Kerslake received an invitation to attend the annual meeting of the Somerset society to be held at

Bruton, four or five miles from Penselwood, to act as "cicerone over Pen-pits." This he at once declined, on the ground that he had already printed all that he had to say about it, and, moreover, that he had an engagement elsewhere.

In spite of these reasons for refusal, the Secretary replied pressing him to come, giving as an especial reason for his doing so that one of their reasons for fixing on Bruton and that line of country was to have the benefit of his ideas there. "Please make up your mind to come," he wrote, adding a further remonstrance that it was incumbent on him to be there as he had made the subject his own.

Kerslake now began to fear that he might be thought to have printed what he did not care to countenance; and, thus challenged, he consented to leave the more distant engagement unfinished, and giving up his intention to remain some time in East Anglia agreed to come to Bruton. When on the ground, having read a paper he had prepared for the occasion, an abstract of his *Primæval British Metropolis*, a discussion arose, in which his views were strongly supported by the Rev. Prebendary Scarth, Bishop Clifford, and the Rev. L. W. Wilkinson, the rector of Penselwood, and the Rev. H. H. Winwood, F.G.S., the worthy member; the only dissentient being the Honorary Secretary, who had pressed for his attendance, and had arranged the meeting.

Concerning this meeting Kerslake wrote in his *Caer Pensauelcoit*—a reassertion of his *Primæval British Metropolis*—published in 1882: "It was during the discussion at Penselwood, which followed the reading of my paper, that the forgetfulness of the late Honorary Secretary's confession that I had made the subject my own," seems first to have shown itself. Forsaking the former holding of a factory of sandstone querns, he declared that the place had supplied the island with arrow-heads, etc., made of the chert so abundant there. On this, Professor Winwood subsequently remarked that "the shivery nature of the chert would not well admit of any good implements being formed; as I found on frequent trials that it had a peculiar will of its own, and split off into fragments the very reverse of what the operator desired" (Bath Field Club, January 12th, 1881).

At this Penselwood meeting, Kerslake continues, "the

Secretary proposed what he called a Sub-Committee of Exploration, the list of whom was partly made up *de circumstantibus*, with others not present, and power to add to their number—that is, of course, any whom he should afterwards find suitable to his purpose: a sort of peerage creation prerogative. In naming the proposed committee, the Secretary unavoidably included the names of those present who had taken part in the discussion; but in doing so, made one fortunate omission. This must have been by one of those oversights that sometimes befall even the most clever projectors. If the one person who had ‘made the subject his own’ had been included in the arrangement, his exclusive property in it would from that time have merged into the Society, in what lawyers call ‘hatch-pot.’ The omission was, however, most fortunate, for it gave me time to realise the consciousness that I really had ‘made the subject my own,’ and that I had a right to keep it. The egg remained in the hand of Columbus, and all that the Secretary could henceforth do was to say it was addled.”

When in the following year the report of this Bruton meeting was published in the Proceedings, a paper by Professor W. Boyd Dawkins was appended, called a Preliminary Report on the Pen Pits at Penselwood, the result, it seems, of a hasty visit on a very wet day. Kerslake comments on this:

“It appears to be honestly drawn up, but partakes of the fallacy of all that has been done under the direction of the late Secretary of the Society, a misdirection to a question aside from the real purpose of my dissertation. Professor Dawkins’s objections to the pits being the remains of habitations, from their not being uniform in size and shape, are completely accounted for by what has been said above of their mediæval disturbance and the recent destruction of the undisturbed ones.

“These mediæval disturbances which had obscured the remains of the ancient habitations by the refuse heaps of the older stone-seekers are now found to have been more extensive than was at first supposed. Meanwhile, the modern process of agricultural levelling has been accelerated by a condition that has confined its action almost exclusively to those of the pits which had not been anciently disturbed: so that the new destruction is on the point of overtaking the old. In the contracts for recent

levellings of the surface, the stone raised forms an essential part of the recompense for the work. For these agreements, therefore, the parts of the area which, without care for levelling the surface, had formerly been quarried already, are naturally postponed, in preference to those of the pits that had remained in their primæval condition, not having been already deprived of the stone stratum. The consequence has been that 'the speedy obliteration of the whole monument,' which was said in the dissertation to be imminent, has been much nearer to actual fact than it was then even thought to be.

"Sir Richard Hoare, in the first part of his *Ancient Wiltshire*, published in 1810, estimated the area covered by the pits at about 700 acres, and gives an engraved plan showing the position of the pits from actual admeasurement. A comparison of this plan with the present condition of the surface, will show how large an extent has been lost since that time. In fact, besides a very great extent of those pits represented by him as then remaining between the village of Penselwood and the right side of the river in Somerset, the whole of those on the left or Wiltshire side have been reduced to corn land within recent memory.

"When, about 1875, the present writer's attention was first directed to the place, a large batch near the village of Pen was then in course of destruction, adjoining the land that had already been enclosed and cropped, and he believes he can attest that they were regularly formed pits, quite distinguishable from the anciently disturbed ones: and the spot at which he read his paper to the Somersetshire Society in 1878 was, on a later visit, found to have since become a recent level yellow surface. Such groups of them as even then remained would, it is feared, now be difficult to find.

"This increase the value of the testimony of Sir Richard Hoare, who, when he printed his plan and description in 1810, had before him a great extent of the more perfect pits, which have since been lost. His testimony of that date is, therefore, much better than our eye-evidence now. He then wrote: 'It would be ridiculous, even for a moment, to suppose that so large a tract of land could have been excavated for the sole purpose of procuring stone, for these excavations *generally cease with the upper stratum of sand*, which covers a deep and fine bed of hard

green stone.' This could not have been the case if the stone, which was abandoned as soon as reached, had been the original object of the pits. Again, in 1822, Sir Richard mentions 'so many *hundred thousand* pits, of a regular and circular form,' and repeats the assertion that 'in every *single* one of them' the bed of stone assumed to be the object of digging them, was still found at the *bottom of the sand*, and at the very point where the excavations terminated. Besides, the stone so coveted is identical with what can be easily obtained in great abundance in more accessible places all over this part of the country."

But a greater agent of destruction than either the mediæval quarrying or the modern levelling was the conversion into a park of the whole of the northern portion of the area within the ramparts.

The Commission of Works eventually took the matter in hand, and Lieut.-General A. Pitt-Rivers (formerly Lane-Fox) was instructed to investigate and report. This was done; and the Report was sent to the Right Hon. G. J. Shaw-Lefevre, H.M. First Commissioner of Works, on 10 July, 1884. In this Report, which is unfairly antagonistic to Mr. Kerslake throughout (Mr. Worth, in his Presidential Address in 1891, calls him Mr. Kerslake's chief opponent), an elaborate description is given of the section of a trench cut through one of the so-called ramparts and extending into the interior to a distance of 170 feet by twelve men between 22nd of October and 4th November, 1883. The General seems to have thought that a microscopical examination of a minute fraction of the spot selected for the purpose of greater importance than a broad conception of what Kerslake meant by a British metropolis and permitted this little pettyfogging digging, under his nose as it were, to prevent his seeing the great question he had been called upon to answer.

But the last page of the Report contains a sentence which contradicts the whole of the Report which precedes it: "There is nothing in the results of my investigation which either favours or disproves the supposition that this spot may have witnessed some such concerted action of independent tribes at the time of Vespasian's invasion, but we have no grounds for supposing that they were permanently organized in large cities." To this I may add that such an instance was unknown in Britain before Kerslake made his discovery.

Caer Pensauelcoit presents a charming object of pilgrimage to an Exonian taking a holiday. It is easily accessible by railway on three of its sides. An ascent of Alfred's Tower, a curious triangular brick building 150 feet high, which stands at the north-west corner of the Caer, gives one a wide view over the neighbouring counties, and the old city (or rather its site) of Kairpen-Huelgoit, which Geoffrey of Monmouth would have us believe was all one with Exeter, lies at his feet. Stourhead, one of the wonders of the West of England (Murray), is well known for its fine collection of pictures, but is still more celebrated for the extreme beauty of its park and ground.

LIST OF MEMBERS.

p Indicates Past Presidents.

* Indicates Life Members.

† Indicates Honorary Members.

‡ Indicates Members who retire at the end of the current year.

The Names of Members of the Council are printed in small capitals;
and of Members whose addresses are not known, in italics.

Notice of Changes of Residence, of Resignations, and of Decease of Members
should be sent to the General Secretary.

Year of
Election.

1913*H.R.H. THE PRINCE OF WALES, K.G., etc. (*All communications to be addressed to Walter Peacock, Esq., M.V.O., Duchy of Cornwall Office, Buckingham Gate, London, S.W.*)

1913 Abell, G. J., 8, Rolle Street, Exmouth.

1901 Acland, Sir C. T. D., Bart., M.A., D.L., J.P., Killerton Park,
near Exeter.

1913*Adams, E. Amery, 186, Sheen Road, Richmond, Surrey.

1896 ADAMS, MAXWELL, c/o Messrs. William Brendon & Son,
Ltd., Plymouth (HON. GENERAL SECRETARY).

1900*ADAMS, S. P., Elbury Lodge, Newton Abbot.

1908 Albert Memorial Library, etc. (The Royal), Exeter, per
H. Tapley Soper, F.R.HIST.S.

1886*Aldridge, C., M.D., Bellevue House, Plympton.

1909 ALEXANDER, J. J., M.A., J.P., Grammar School, Tavistock.

1916^p ALLEN, E. J., D.SC., F.R.S., The Laboratory, Citadel Hill,
Plymouth (PRESIDENT).

1896*Allhusen, C. Wilton, Pinhay, Lyme Regis.

1869 AMERY, J. S., Druid, Ashburton (HON. GENERAL TREASURER).

1901 ANDREW, SIDNEY, 18, West Southernhay, Exeter.

1894 Andrews, John, Traine, Modbury, Ivybridge.

1912 Anstey, A., 13, Lyndhurst Road, Exeter.

1914 Applegate, Miss M. A., 95, East Street, South Molton, N. Devon.

1912 Astor, Waldorf W., M.P., Cliveden, Taplow, Bucks.

1912 Axe, Rev. Arthur, Heavitree, Exeter.

1912*Babbage, Gilbert, 16, Cathedral Close, Exeter.

1911‡Ball, Edwin Jennings, PH.D., 6, Adelphi Terrace, Paignton.

1914 Balleine, Rev. James A., M.A., Elm Brae, Seaway Lane,
Cockington, S. Devon.

- 1915 Barber, James, Colintrave, Cranford Avenue, Exmouth.
 1912 Baring, Sir Godfrey, Bart., M.P., 32, Lowndes Square, London, S.W.
 1878**p*BARING-GOULD, Rev. S., M.A., Lew Trenchard, Lewdown.
 1902*Barratt, Sir Francis Layland, Bart., M.A., 68, Cadogan Square, London, S.W.
 1915 Bartlett, Rev. Lewis Edward, The Vicarage, Countess Weir, Exeter.
 1894*Bayly, Miss Anna, Seven Trees, Plymouth.
 1898*Bayley, Arthur R., B.A., F.R.HIST.S., St. Margaret's, Great Malvern.
 1903 Bayly, John, Highlands, Ivybridge.
 1913*Bedford, His Grace The Duke of, K.G., Woburn Abbey, Bedfordshire.
 1914 BEEBE, Rev. W. N. P., M.A., The Vicarage, Whitchurch, Tavistock.
 1916 Bellamy, Sir Joseph, Thornpark Road, Plymouth (VICE-PRESIDENT).
 1912‡Benn, A. Shirley, M.P., 18, Bolton Gardens, London, S.W.
 1905 Bennett, Ellery A., 17, Courtenay Street, Plymouth.
 1912 Bickersteth, Rev. H. L., B.A., Clevedon, Glanville Road, Tavistock.
 1904 Bird, W. Montagu, J.P., Dacre House, Ringmore, Teignmouth.
 1912 Birdwood, Allan Roger, 18, Orchard Gardens, Teignmouth.
 1889 Birmingham Free Library, Birmingham.
 1916 Blackall, E., 6, Chapel Street, Plymouth (VICE-PRESIDENT).
 1886 BLACKLER, T. A., Royal Marble Works, St. Marychurch, Torquay.
 1909 BODY, MARTIN, Rockmount, Launceston.
 1912 Bond, Francis William, 40, Loughborough Park, Brixton, S.W.
 1901 Bond, P. G., 105, Union Street, Plymouth.
 1901 Bond, Miss S. C., 36, Masonic Street, Rockland, Knox Co., Maine, U.S.A.
 1906 Bond, Rev. W. F., M.A., Lancing College, Shoreham, Sussex.
 1913 Boston Public Library, U.S.A., c/o Mr. Bernard Quaritch, 11, Grafton Street, New Bond Street, London, W.
 1912 Boucher, John Bishop, Rosemont, Heavitree Road, Exeter.
 1906 Bovey, Thomas William Widger, M.R.C.S., L.R.C.P.LOND., Castle House, Bampton, N. Devon.
 1912 Bowden, John F., F.S.I., Crossways, West Avenue, Exeter.
 1898 Boyer, Commander F., R.N., Whitehall, Padstow, Cornwall.
 1911 Boyle, Mrs. C. Vicars, Cheldon Rectory, Chulmleigh, North Devon.
 1916 BRACKEN, C. W., B.A., F.E.S., 5, Carfrae Terrace, Plymouth (VICE-PRESIDENT).
 1900*Bradridge, C. Kingsley, 11, Plasturton Avenue, Cardiff.

- 1912 Brant, Captain, R.N., St. Martins, Budleigh Salterton.
 1916 Breadgate, Mrs. Radford, Nymet Rowland, Lapford, Devon.
 1905 Brendon, Charles E., 6, Hillsborough, Plymouth.
 1892 Brendon, W. T., The Anchorage, Grand Parade, Plymouth.
 1916 Breton, Rev. H. H., M.A., Sheepstor Vicarage, Horrabridge, Devon.
 1905 Briggs, C. A., F.E.S., Rock House, Lynmouth, North Devon.
 1916 Brown, W. L. Trant, F.R.I.B.A., 332, High Road, Kilburn, London, N.W.
 1916 Brown, J. P., J.P. Abbey Stores, Plymouth.
 1911*Brushfield, Miles Nadauld, 13, Allfarthing Lane, Wandsworth Common, Surrey.
 1911 Buckfast, The Right Rev. The Lord Abbot of (Dom Anscar Vonier, O.S.B.), Buckfast Abbey, Buckfast, S. Devon.
 1912 Burlace, J. B., 38, Corfton Road, Ealing, W.
 1911 Burn, Colonel C. R., M.P., 77, Cadogan Square, London, S.W.
 1887pBURNARD, ROBERT, J.P., F.S.A., Stoke-in-teignhead, Teignmouth (VICE-PRESIDENT).
 1887 Burnard, Mrs. F. L., Stoke-in-teignhead, Teignmouth.
 1916 Burton, R. Fowler, 2, Osborne Villas, Devonport.
 1914 Butcher, Francis J., The Manor House, Tavistock.
 1914 Butcher, Mrs. Francis J., The Manor House, Tavistock.
 1902 Calmady, Charles Calmady, Stoney Croft, Horrabridge.
 1908 Card, F. F., Broadlands, Newton Abbot.
 1915 Carey, N. M., 37, Sea View Avenue, Lipson, Plymouth.
 1891*Carpenter, H. J., M.A., LL.M., Penmead, Tiverton.
 1866*Carpenter-Garnier, J., J.P., Rookesbury Park, Wickham, Hants.
 1908 Carr-Smith, Miss Rose E., Haytor, Avenue Road, Stratford-on-Avon.
 1902 Carter, Miss E. G., Hartland, North Devon.
 1899 Cartwright, Miss M. Anson, 11, Mont-le-Grand, Heavitree, Exeter.
 1895*Cash, A. Midgley, M.D., Limefield, Torquay.
 1898 Cave, Sir C. D., Bart., Sidbury Manor, Sidmouth.
 1910 CHALK, Rev. E. S., M.A., Kentisbeare Rectory, Cullompton.
 1911*Chalmers, R. W. S., Holcombe, Moretonhampstead.
 1899*Champernowne, A. M., M.A., J.P., Dartington Hall, Totnes.
 1890 Chanter, C. E. R., Broadmead, Barnstaple.
 1901 CHANTER, Rev. J. F., M.A., F.S.A., Marlands, Exmouth.
 1884 Chapman, H. M., St. Martin's Priory, Canterbury.
 1881pCHAPMAN, Rev. Professor, M.A., LL.D., Crofton, Byronshill, Torquay.
 1906 CHAPPLE, W. E. PITFIELD, The Shrubbery, Axminster.
 1906 Chapple, Miss Pitfield, The Shrubbery, Axminster.
 1902 Charbonnier, T., Art Gallery, Lynmouth.

- 1908 Chennells, Rev. A. W., B.A., LL.D., The College, Newton Abbot.
- 1911 Chichester, Miss, Arlington Court, Barnstaple.
- 1914 CHILCOTT, EDWARD W., B.A., Chollacott Lane House, Tavistock.
- 1896 CHOPE, R. PEARSE, B.A., The Patent Office, 25, Southampton Buildings, London, W.C. (VICE-PRESIDENT).
- 1912 Clapp, Cecil Robert Mainwaring, M.A., LL.M. (Cantab.), 2, Bedford Circus, Exeter.
- 1905 CLARKE, Miss KATE, 2, Mont-le-Grand, Exeter.
- 1901^pCLAYDEN, Principal A. W., M.A., F.G.S., Royal Albert Memorial College, Exeter.
- 1903 CLAY-FINCH, Mrs., 17, Chester Road, Whitechurch, Salop.
- 1912 CLIFFORD, Colonel E. T., v.d., 6, Cranley Gardens, South Kensington, London, S.W. (VICE-PRESIDENT).
- 1916[†]Cocks, W. L., M.A., 7, Torrington Place, Plymouth.
- 1909 Colborne, The Hon. Mrs. Mabel, Venn, Ivybridge.
- 1916 Cole, C. F., Meudon Vean, near Falmouth.
- 1898^{*}^pCOLERIDGE, Right Hon. Lord, M.A., The Chanter's House, Ottery St. Mary.
- 1894 Collier, George B., M.A., Whinfield, South Brent.
- 1896 Collings, The Right Hon. Jesse, M.P., Edgbaston, Birmingham.
- 1915 Commin, H., 230, High Street, Exeter.
- 1912 Cornish, Frederick John, 44, Magdalen Road, Exeter.
- 1908 Cornish-Bowden, Peter, Zaire, Newton Abbot.
- 1910 Cornwall Polytechnic Society, The Royal (*per* the Secretary, E. W. Newton, Camborne).
- 1904 Coryndon, R. T., The Residency, Maseru, Basutoland, South Africa.
- 1911^{*}Crabbe, Herbert Ernest, F.R.G.S., Teignbridge House, Kingsteignton, S. Devon.
- 1908 Crang, W. H., 11, Collingwood Villas, Devonport.
- 1911 Cree, W. E., M.D., Penryn, Watts Road, Tavistock.
- 1904 Crespin, C. Legassicke, 51, West Cromwell Road, London, S.W.
- 1907 CRESSWELL, Miss BEATRIX F., 23, Wonford Road, Exeter.
- 1898^pCROFT, SIR ALFRED W., K.C.I.E., J.P., M.A., Rumleigh, Bere Alston, R.S.O. (VICE-PRESIDENT).
- 1886 Cumming, Stephen A., The Corbyn, Wheatridge Lane, Cockington, Torquay.
- 1916 Dallas, Miss Margaret Frazer, Moorfield, Mannamead, Plymouth.
- 1911 Davey, G. W., 16, John Street, Bedford Row, London, W.C.
- 1911 Davie, G. C., J.P., c.c., The Elms, Bishop's Tawton, Barnstaple.
- 1902 Daw, Mrs., Yeoldon, Northam, N. Devon.

- 1912 Depree, Mrs. Lilian May, 65, Portland Court, London, W.
 1911 Devon and Exeter Club, Exeter (*per* Hon. Sec.).
 1905 Dewey, Rev. Stanley D., M.A., Rectory, Moretonhamstead.
 1902 Dimond-Churchward, Rev. Preb., M.D., The Vicarage, Northam, North Devon.
 1882 DOE, GEORGE M., Enfield, Great Torrington.
 1898*Donaldson, Rev. E. A., Pyworthy Rectory, Holsworthy, North Devon.
 1913 Downes, Harold, M.B., Ditton Lea, Ilminster, Somerset.
 1907 DRAKE, F. MORRIS, Cathedral Yard, Exeter.
 1904 Drake, Major William Hedley, Brynwillow, Polsham Park, Paignton.
 1902 Drayton, Harry G., 201, High Street, Exeter.
 1910 Drewe, Julius C., J.P., Wadhurst Hall, Sussex.
 1910 Drewe, William Francis, Broadhembury House, Honiton.
 1909 Duke, H. E., The Rt. Hon., P.C., K.C., M.P., 37, Alleyn Park, Dulwich, London, S.E. (VICE-PRESIDENT).
 1889 DUNCAN, A. G., J.P., South Bank, Bideford.
 1913 Dunn, Miss Mary Rouse, Riverside, Bideford.
 1898*Dunning, Sir E. H., Knt., J.P., Stoodleigh Court, Tiverton.
 1901*Durnford, George, J.P., C.A., F.C.A.CAN., Greenhythe, Westmount, Montreal, Canada.
 1879 Dymond, Arthur H., 24, Burton Court, Chelsea, London, S.W.
 1916 Dymond, G. P., M.A., 6, Lockyer Street, Plymouth.
 1902 Dymond, Mrs. Robert, The Mount, Bideford.
 1908 Eames, Miss Kate, Cotley, near Chard.
 1907 Eames, Miss Maria Deane, Cotley, near Chard.
 1901 Earle, The Right Rev. Alfred, D.D., Bishop of Marlborough, Dean of Exeter, The Deanery, Exeter.
 1898 Eccles, J. A. J., Stentwood, Dunkeswell Abbey, Honiton.
 1916 Edwards, Henry J., MUs. Doc. OXON., HON. R.A.M., Taw Vale Parade, Barnstaple.
 1901 Edye, Colonel L., Stanley Court, Stanley Street, Montreal, Canada.
 1896 ELLIOT, EDMUND A. S., M.R.C.S., M.B.O.U., Slade House, near Kingsbridge.
 1909 Elliot, Rev. F. R., M.A., M.V.O., Tregie, Paignton.
 1888 Ermen, Miss, St. Katherine's, Torre, Torquay.
 + 1898*Evans, Arnold, 4, Littlefield Place, Clifton.
 1904 Evans, Major G. A. Penrhys, Furzedene, Budleigh Salterton.
 1895 EVANS, H. MONTAGU, 2, Mount Tamar Villas, St. Budeaux, Devon.
 1886 Evans, J. J. Ogilvie, 1, Orchard Gardens, Teignmouth.
 1914 Evans, Rev. A. C., M.A., The Vicarage, Lamerton, Tavistock.
 + 1880*Evans, Parker N., Park View, Brockley, West Town, R.S.O., Somerset.

- 1913 Evans, Wilfrid J. O., West Street, Ashburton.
 1902*Eve, The Hon. Sir H. T., Yarner, Bovey Tracey.
 1901 Every, Rev. H., M.A., Holy Trinity Vicarage, Barnstaple.
 1904 Every, Richard, Marlands, Heavitree, Exeter.
 1905^pEXETER, The Rt. Rev. THE LORD BISHOP of, The Palace, Exeter.

- 1912 Fairbrother, G. H., Whitehall, Bideford.
 1905 Falcon, T. A., M.A., Hill Close, Braunton, Devon.
 1896 Firth, H. Mallaby, Knowle, Ashburton.
 1896*Firth, R. W., Place, Ashburton.
 1911 Fleming, George McIntosh, c.c., Loventor Manor, Totnes.
 1906 Fortescue, Rt. Hon. the Earl, Castle Hill, South Molton.
 1910 FOSTER, M. T., Fore Street, Cullompton.
 1867*Foster, Rev. J. P., M.A., Cotswold Park, Cirencester.
 1876*Fowler, Rev. Canon W. W., Earley Vicarage, Reading.
 1876*Fox, Charles, The Pynes, Warlingham-on-the-Hill, Surrey.
 1892 Francis, H., C.E., 12, Lockyer Street, Plymouth.
 1900 Francken, W. A., Frostleigh, Grendon Road, Exeter.
 1914 Frost, Miss Dorothy, Regent Street, Teignmouth.
 1912^pFROUDE, ASHLEY A., C.M.G., Collapit Creek, Kingsbridge,
 S. Devon.
 1908 Fulford, Francis A., Great Fulford, Dunsford, Exeter (VICE-
 PRESIDENT).
 1880 Furneaux, J., Tor View, Buckfastleigh, Devon.

- 1908 Gallsworthy, Frank, Wellesley Buildings, Wellington Street,
 Leeds.
 1906 Gardiner, John, The Elms, Rudgeway, R.S.O., Glos.
 1913 Gates, Dr. Mabel, M.D., B.S. (LOND.), 15, York Road, Exeter.
 1901 Gauntlett, George, 27, Dix's Field, Exeter.
 1909 Geen, Harry, Brandize, Avenue Road, Torquay.
 1910†Geen, Henry, J.P., Tenby House, Okehampton.
 1900*Gervis, Henry, M.D., F.R.C.P., F.S.A., J.P., 15, Royal Crescent,
 Bath.
 1910 Gidley, G. G., M.D., Heyford House, Cullompton.
 1909 Giffard, Edward Walter, 13, Chesham Place, London, S.W.
 1892*Gill, Miss, St. Peter Street, Tiverton.
 1877*Glyde, E. E., F.R.MET.SOC., 323, Ross Street, Edmonton, Alta,
 Canada.
 1902 Goaman, Thomas, J.P., 14, Butt Gardens, Bideford.
 1911 Grant, W. J., Parade House, Dartmouth.
 1881 Gregory, A. T., *Gazette* Office, Tiverton.
 1913*Grigg, H. W., Cann House, Tamerton Foliot, Crownhill,
 S.O., Devon.
 1896 Grose, S., M.D., F.R.C.S., Bishopsteignton, Teignmouth.

- 1892^pHALSBURY, The Right Hon. the Earl of, 4, Ennismore Gardens,
 London, S.W.
 1895*Hambleton, The Right Hon. Viscount, 3, Grosvenor Place,
 London, S.W.

- 1889 Hamling, J. G., F.G.S., The Close, Barnstaple.
 1880*Hamlyn, Joseph, Fullaford, Buckfastleigh.
 1895 Harding, T. L., Elmington, Chelston, Torquay.
 1912 Hardy, Francis James, Gittisham Hill, Honiton.
 1893 Harris, Miss, Sunningdale, Portland Avenue, Exmouth.
 1916 Harris, George Thomas, Kelso, Alexandria Road, Sidmouth.
 1905 HARTE, Prof. WALTER J., Royal Albert Memorial College, Exeter.
 1909 Hart-Smith, C. L., Castle Street, Launceston.
 1908 Harvard University Library, Cambridge, Mass., U.S.A., *per* Messrs. Edward G. Allen and Son, Ltd., 14, Grape Street, Shaftesbury Avenue, London, W.C.
 1898*Harvey, Henry Fairfax, Elidon, Weymouth.
 1900 Harvey, Sir Robert, D.L., J.P., Dundridge, Totnes.
 1875*Hatt-Cook, Herbert, Hartford Hall, Cheshire.
 1913 Hawker, Henry Gore, Strode, Ivybridge, S. Devon.
 1910 Hawkins, Rev. Edward J., B.A., 18, Marlborough Road, Exeter.
 1912 Hearn, Mrs. Eliza Christine, Ford House, Alphington Road, Exeter.
 1890*Heberden, W. B., C.B., Elmfield, Exeter.
 1888*Hepburn, Sir T. H., Knt., J.P., C.A., Dunmore, Bradninch, Cullompton.
 1907 Herron, H. G. W., c/o Messrs. Grindlay & Co., 54, Parliament Street, S.W.
 1908 Hext, George, Kingstone, Newton Abbot.
 1882*HIERN, W. P., M.A., F.R.S., J.P., C.A., The Castle, Barnstaple.
 1909 Hill, Rev. H. A., Worlington Rectory, Morchard Bishop, North Devon.
 1916 Hill, H. S., 29, Staddon Terrace, Plymouth.
 1892*Hingston, C. A., M.D., 3, The Esplanade, Plymouth (VICE-PRESIDENT).
 1907 Hitchcock, Arthur, Bettysground, Shute, Axminster.
 1912 Hitchcock, Walter M., 48, Memorial Hall, Farringdon Street, London, E.C.
 1898 Hodgeson, T. V., Municipal Museum, Plymouth.
 1901 Holman, H. Wilson, F.S.A., 4, Lloyd's Avenue, Fenchurch Street, London, E.C.
 1901 Holman, Herbert, M.A., LL.B., Haldon Lodge, Teignmouth.
 +1893 Holman, Joseph, Downside House, Downlewine, Sneyd, Bristol.
 1906 Holman, Francis Arthur, Jerviston, Streatham Common, London, S.W.
 1906 Holman, Ernest Symons, 4, Lloyd's Avenue, Fenchurch Street, London, E.C.
 1914*Hooper, H. Dundee, M.A., Ardvar, Torquay.
 1910 Hooppell, Rev. J. L. E., St. Peter's Vicarage, 10, Hoxton Square, London, N.
 1911 Hopper, A. E., Queen Anne's Chambers, Barnstaple.

- + 1896*Hosegood, S., Chatford House, Clifton, Bristol.
 1895*HUGHES, T. CANN, M.A., F.S.A., Town Clerk, Lancaster.
 1906†Hunt, Rev. Jas. Lyde, Efford, Paignton.
 1876 Hurrell, J. S., The Manor House, Kingsbridge.
 1886 Huxtable, James, 51, The Avenue, Kew Gardens.
 1908 Hyde, The Venble. H. B., The Vicarage, Bovey Tracey.
- 1893 Iredale, A., Strand, Torquay.
- 1916 Jackson, George, F.R.C.S., J.P., 10, Portland Villas, Plymouth
 (VICE-PRESIDENT).
 1890*Jackson, Mark, Homelea, Purley, Surrey.
 1904 Jackson, Rev. Preb. P., St. Martins, Exeter.
 1908 James, S. Boucher, Hallsannery, Bideford.
 1912 JENKINS, RHYS, M.I.M.E., The Patent Office, 25, Southampton
 Buildings, London, W.C.
 1916 Jenkins, Rev. W. T. LL., The Rectory, Instow, N. Devon.
 1916 Jennings, W. H., J.P., Fairfield, Lockyer Road, Mannamead,
 Plymouth.
 1901 Jerman, J., F.R.I.B.A., F.R.M.S., The Bungalow, Topsham Road,
 Exeter.
 1911 JOCE, THOMAS JAMES, 3, Manor Crescent, Newton Abbot.
 1913*Jones, Evelyn Llewellyn Hustler, Fishwick, Kingsteignton,
 Newton Abbot.
 1913 JORDAN, Mrs. FLORA, The Cedars, Teignmouth.
 1883 JORDAN, W. F. C., The Cedars, Teignmouth.
 1916 Judge, J. J., 15, Hill Park Crescent, Plymouth.
 1899*JULIAN, Mrs. HESTER FORBES, Redholme, Torquay.
- 1913 Keene, Rev. E. G. Perry-, Dean Prior, Buckfastleigh.
 1916 Keily, The Rt. Rev. Bishop John, D.D., Bishop's House,
 Plymouth (VICE-PRESIDENT).
 1872*Kennaway, The Rt. Hon. Sir J. H., Bart., M.A., Escot,
 Ottery St. Mary.
 1880 King, C. R. Baker, A.R.I.B.A., 35, Oakley Square, London,
 N.W.
 1901 Knight, Mrs. J. H., The Firs, Friar's Walk, Exeter.
 1914 Knight, N. Hine, 5, Borringdon Terrace, Plympton.
 1911†Knollys, Major L. F., C.M.G., The Wilderness, Dart-
 mouth.
- 1903 Laing-Oldham, Philip M. T., M.A., Mount View, Oke-
 hampton.
 1871 Lake, William Charles, M.D., Benton, Teignmouth.
 1913 Lane, Rev. W. H. Cecil, M.A., The Parsonage, Postbridge,
 Princetown, Devon.
 1907 Lane, John, The Bodley Head, Vigo Street, London, W.
 1904 Lang, Charles Augustus, The Shiel, Elgin Road, Weybridge.

- 1898 Langdon, Rev. F. E. W., Membury, near Chard.
 1916 Langford, Rev. Canon John Frere, Southbrook, Starcross, Devon.
 1906 LARTER, Miss C. ETHELINDA, F.L.S., 2, Summerland Terrace, St. Marychurch, S. Devon.
 1913 Lavie, Arthur, Brimhill Lodge, Maidencombe, Torquay.
 1905 LAYCOCK, C. H., Cross Street, Moretonhampstead.
 1889*Lee, Col. J. W., Budleigh Salterton, South Devon.
 1897^pLETHBRIDGE, Sir ROGER, K.C.I.E., D.L., J.P., M.A., The Manor House, Exbourne, R.S.O., Devon.
 1914 Lewin, L. H., Willowby Park Villas, Yelverton, S. Devon.
 1916 Lewis, W. Aston, Kingsand, Plymouth.
 1911 Lindsay, W. A., J.P., D.L., K.C., M.A., F.S.A., Windsor Herald, College of Arms, London, E.C., and Deer Park, Honiton.
 1890*Longstaff, G. B., M.D., Twitcham, Mortehoe, R.S.O.
 1911 Lort-Phillips, E., J.P., Gunfield, Dartmouth.
 1898 LOWE, HARFORD J., Kotri, Chelston, Torquay.
 1863*Lyte, F. Maxwell, M.A.
- 1886*MacAndrew, James J., J.P., F.L.S., Lukesland, Ivybridge.
 1908 MacCormick, Rev. F., F.S.A.Scot., M.R.A.S., Wrockwardine Wood Rectory, Wellington, Salop.
 1906 MacDermot, E. T., Lillycombe, Porlock, Somerset.
 1894 Mallet, W. R., Exwick Mills, Exeter.
 1904 Manchester Free Reference Library, King Street, Manchester.
 1905 Manisty, George Eldon, Nattore Lodge, Budleigh Salterton.
 1903 Manlove, Miss B., Moor Lawn, Ashburton.
 1901 Mann, F., Leat Park, Ashburton.
 1913†Mann, Jonathan, Wavelet, Sands Road, Paignton.
 1914*Mardon, Evelyn John, B.A., LL.B., F.R.G.S., New Court, Topsham, Devon.
 1897*Mardon, Heber, Clifden, Teignmouth.
 1901 Marines, The Officers Plymouth Division R.M.L.I., Royal Marine Barracks, Stonehouse, Devon.
 1904 Marshall, James C., Oak Hill, Stoke-on-Trent.
 1871*MARTIN, JOHN MAY, C.E., Musgrave House, 6, Denbigh Gardens, Richmond, Surrey.
 1908 Matthews, Lieut.-Colonel Alfred, Gratton, Bow, N. Devon.
 1887 Matthews, Coryndon, F.E.S., Stentaway, Plymstock, S. Devon.
 1916†Matthews, Donald J., The Laboratory, Citadel Hill, Plymouth.
 1894 Maxwell, Mrs., Lamorna, Torquay.
 1909 May, W. H., 23, Lockyer Street, Plymouth.
 1907 McLennan, Frank, Lynch Villa, Axminster.
 1898 Melhuish, Rev. George Douglas, M.A., Ashwater Rectory, Beaworthy.
 1902 Messenger, Arthur W. B., Staff Paymaster R.N., 7, Penlee Gardens, Stoke, Devonport.

- 1916† Michell, George J., B.A.LOND., Beauchamp, Peverell, Plymouth.
- 1900 Mildmay, F. B., M.P., Flete, Ivybridge.
- 1916 Monk, R. Rugg, J.P., 13, St. Lawrence Road, Plymouth.
- 1910 Monkswell, Right Hon. Lord, 117, St. James's Court, London, S.W.
- 1905 Moon, W. J., J.P., 20, Home Park Villas, Devonport.
- 1906 Morley, The Rt. Hon. the Earl of, Saltram, Plympton.
- 1909 MORRIS, R. BURNET, M.A., LL.B., 24, Bramham Gardens, London, S.W.
- 1914 Morris, Miss E. A., Nirvana, Ivybridge, S. Devon.
- 1908 Morrison-Bell, Major E. F., M.P., Pitt House, Chudleigh.
- 1910 Morrison-Bell, Major A. C., M.P., 13, Seymour Street, Portman Square, London, W.
- 1898 MORSHEAD, J. Y. ANDERSON, Lusways, Salcombe Regis, Sidmouth.
- 1886* Mortimer, A., 1, Paper Buildings, Temple, London.
- 1912 Mortimer, Fleet-Surgeon, Edgar F., R.N., Rock Mount, Torrington, N. Devon.
- 1874* Mount Edgecumbe, Right Hon. the Earl of, Mount Edgecumbe, Plymouth (VICE-PRESIDENT).
- 1915 Mullins, Alfred G., Newlands, Lympston, S. Devon.
- 1916 Munday, W. L., Westwell Street, Plymouth (VICE-PRESIDENT).
- 1904 Murray, O. A. R., C.B., The Admiralty, London, S.W.
- 1885* NECK, J. S., J.P., Great House, Moretonhampstead.
- 1912 Newberry Library, Chicago (*per* Messrs. B. F. Stevens and Brown, 4, Trafalgar Square, London, W.C.).
- 1912 Newman, Sir Robert, Bart., D.L., J.P., Mamhead Park, Exeter.
- 1902 Newton Club (*per* T. W. Donaldson, Esq., Hon. Sec.), Newton Abbot.
- 1913 New York Public Library (*per* Messrs. B. F. Stevens and Brown, 4, Trafalgar Square, London, W.C.).
- 1908 Nisbet, A. T., M.D., The Laurels, Powderham Road, Newton Abbot.
- 1908 Northcote, Gordon Stafford, Willowmead, Budleigh Salterton.
- 1909 Northcote, The Rt. Hon. Lady Rosalind, Pynes, near Exeter.
- + 1915 Northmore, John, Fairhaven, 46, Woodstock Road, Redland, Bristol.
- 1915 Notley, Rev. J. T. B., B.A., The Rectory, Diptford, S. Brent.
- 1904 Nourse, Mrs. Stanhope M., Shute Vicarage, Axminster.
- 1904 Nourse, Rev. Stanhope M., Shute Vicarage, Axminster.
- 1903 Nowell, Capt. S., 17, Rock Park, Rock Park Ferry, Liverpool.
- 1914 Odell, Rev. F. J., R.N., Hill View, Lapford, Morchard Bishop, N. Devon.
- 1914 Openshaw, Oliver, The Grange, Kentisbury, near Barnstaple.
- 1913 Paige, Henry, Broomborough, Totnes.

- 1910 Palmer, Frederick William Morton-, M.D., M.A., B.C. (Cantab.), F.S.A., 13, Orchard Gardens, Teignmouth.
- 1911 Pannell, Rev. A. P., Bulmer Vicarage, Sudbury, Suffolk.
- 1906 Parry, H. Lloyd, B.A., B.Sc., LL.B., Guildhall, Exeter.
- 1912 Pastfield, John Robinson, 7, Victoria Terrace, Magdalen Road, Exeter.
- 1908 Pateman, Arthur F., Braeside, Belle Vue Road, Exmouth.
- 1902 Patey, Rev. Charles Robert, Sowton Rectory, Exeter.
- 1903 Peacock, H. G., L.R.C.P., M.R.C.S., Mem. Brit. Mycol. Soc., Hareston Lodge, Ash Hill Road, Torquay.
- 1914 Pearse, Captain A. B. Rombulow, 6th Gurka Rifles, c/o Messrs. Cox and Co., 16, Charing Cross, London, S.W.
- 1901 Pearse, James, 11, Salutory Mount, Heavitree, Exeter.
- 1896 PEARSON, Rev. J. B., D.D., 35, Marlborough Road, Bournemouth, W.
- 1910 Peck, Miss Charlotte L., Maidencombe House, St. Mary-church, Torquay.
- 1911 Peek, C., Coombe Villa, Sandquay, Dartmouth.
- 1882 Penzance Library, Penzance.
- 1908 Peter, Claude H., Craigmore, Launceston.
- 1897 Peter, Thurstan C., Redruth.
- 1883 Petherick, J., 8, Clifton Grove, Torquay.
- 1916 Pethybridge, H. M., 11, Frankfort Street, Plymouth.
- 1912 Pinder, William Henry, Shillingford Lodge, near Exeter.
- 1899 Pinkham, Charles, J.P., C.A., Linden Lodge, 7, Winchester Avenue, Brondesbury, N.W.
- 1879 Plymouth Free Public Library, Plymouth.
- 1916 Plymouth Proprietary Library, Cornwall Street, Plymouth.
- 1880 Pöde, J. D., Slade, Cornwood, Ivybridge.
- 1892p POLLOCK, Sir F., Bart., LL.D., F.S.A., etc., 21, Hyde Park Place, London, W.
- 1900*Ponsonby, Rev. Preb. Stewart Gordon, M.A., Rectory, Stoke Damerel, Devonport (VICE-PRESIDENT).
- 1900*Pope, John, Coplestone House, Copplestone.
- 1878*Powell, W., M.B., F.R.C.S., Hill Garden, Torquay.
- 1909 Prance, H. Penrose, Whitchurch, Mannamead, Plymouth (VICE-PRESIDENT).
- 1915 Prideaux, Charles S., F.R.S.M., L.D.S. Eng., Ermington, Dorchester, Dorset.
- 1901*Prideaux, W. de C., F.R.S.M., L.D.S. Eng., F.S.A., 12, Frederick Place, Weymouth.
- 1887*PROWSE, Lt.-Colonel ARTHUR B., R.A.M.C.(T.), M.D., F.R.C.S., 5, Lansdown Place, Clifton.
- 1891 Prowse, W. B., L.R.C.P., M.R.C.S., 31, Vernon Terrace, Brighton.
- 1894*Pryke, Rev. Canon W. E., M.A., The Close, Exeter.
- 1893 Punchard, Rev. Canon E. G., D.D., Sextry House, Ely.
- 1901 Radford, A. J. V., F.S.A., Vacye, College Road, Malvern.
- 1898*RADFORD, ARTHUR L., F.S.A., The Manor House, Bradninch, Devon.

- 1888 RADFORD, Lady, F.R.HIST.S., Chiswick House, Ditton Hill, Surbiton, Surrey.
- 1916 Radford, Mrs. W. T. A., Rose Cottage, Eggesford, Devon.
- 1916 Raymond, Miss Mildred, St. Michael's Lodge, Stoke, Plymouth.
- 1915 Record Office Library, The Public, c/o Messrs. Wyman and Sons, Ltd., Ireland Yard, St. Andrew's Hill, London, E.C.
- 1896 REED, HARBOTTLE, F.R.I.B.A., 12, Castle Street, Exeter.
- 1912 Reed, Herbert, Thornlea, Cowley Road, Exeter.
- 1912 Reed, William Henry, Thornlea, Cowley Road, Exeter.
- 1909 Reform Club, Pall Mall, London, S.W. (*per* Librarian).
- 1885*Reichel, L. H., Beara Court, Highampton, North Devon.
- 1872 REICHEL, Rev. OSWALD J., B.C.L., F.S.A., A la Ronde, Lympstone, Devon.
- 1911 Rendell, Dr., 19, Norfolk Crescent, Hyde Park, London, W.
- 1904 Reynell, B., 152, Selhurst Road, South Norwood, London, S.E.
- 1898*Reynell-Upham, W. Upham, 4, Keat's Grove, Hampstead, London, N.W.
- 1916 Rider, Alonzo J., Outram Terrace, Devonport.
- 1914 Roberts, Herbert James, Redgate, Postbridge, Princetown, S. Devon.
- 1906 Roberts, Rev. R. O., East Down Rectory, Barnstaple.
- 1916 Rogers, Henry J., 8, May Terrace, Plymouth.
- 1909 Rogers, R. B., Hexworthy, Lawhitton, near Launceston.
- 1902*Rogers, W. H., J.P., Orleigh Court, Bideford.
- 1914 Rowe, Miss Flora A. M., Wonwood, Tavistock.
- 1909 Rowe, Mrs. J. Brooking, Castle Barbican, Plympton.
- 1912 Rowley, F. R., F.R.M.S., Royal Albert Memorial Museum, Exeter.
- 1899 Rudd, E. E., 18, Gladys Road, West Hampstead, London, N.W.
- 1905*Rundell, Towson William, F.R.MET.SOC., 25, Castle Street, Liverpool.
- 1914 Rylands Library (The), Manchester.
- 1912**p*St. CYRES, The Rt. Hon. Viscount, J.P., M.A., Pynes, near Exeter.
- 1898*St. Maur, Harold, D.L., J.P., Stover, Newton Abbot.
- 1910 Salter, Miss Mary, Romsdal, Torquay.
- 1904 Sanders, James, J.P., C.C., 21, South Street, South Molton.
- 1912 Satow, The Rt. Hon. Sir Ernest M., P.C., G.C.M.G., Beaumont, Ottery St. Mary.
- 1881*Saunders, Ernest G. Symes, M.D., 20, Ker Street, Devonport.
- 1877*Saunders, George J. Symes, M.D., Lustleigh, Burlington Place, Eastbourne.
- 1910 de Schmid, E. H., 21, Warwick Square, Carlisle.
- 1906 Scott, S. Noy, D.P.H. LOND., L.R.C.P. LOND., M.R.C.S. ENG., Elmleigh, Plymstock.

- 1900*Scrimgeour, T. S., Natsworthy Manor, Ashburton.
 1906 Segar, Richard, 64, St. Gabriel's Road, Cricklewood, London, N.
 1916 Sexton, F., 3, Queen Anne Terrace, Plymouth.
 1894 Shapland, A. E., J.P., Church House, South Molton.
 1906 Sharland, A., 25, Charleville Circus, West Hill, Sydenham, London, S.E.
 1909 Sheldon, Gilbert, 70, Longton Grove, Sydenham, London, S.E.
 1910 Sheldon, Miss Lilian, 70, Longton Grove, Sydenham, London, S.E.
 1882 Shelley, Sir John, Bart., D.L., J.P., Shobrooke Park, Crediton.
 1915 Shepherd, Captain E., 2, Cornwall Road, London, S.W.
 1907 Shepperson, Claude, A.R.W.S., 18, Kensington Court Place, London, W.
 1885 Sibbald, J. G. E., Mount Pleasant, Norton S. Philip, Bath.
 1913 Simmons, Sydney, J.P., Okehampton, Torrington Park, Friern Barnet, London, N.
 1914 Simpkin, Marshall, Hamilton, Kent & Co., Ltd., 4, Stationers' Hall Court, London, E.C.
 1907 Simpson, S., Cleeve, Christow, near Exeter.
 1902 SKINNER, A. J. P., Colyton.
 1906 SKINNER, Miss EMILY, 21, St. Peter Street, Tiverton.
 + 1878 Slade, S. H., 65, Westbury Road, Westbury-on-Trym, Glos.
 1914 Small, A., Taw View, Pitt Hill, Appledore, N. Devon.
 1916 Snell, H. J., Grimston, Houndiscombe Road, Plymouth (VICE-PRESIDENT).
 1905 Snell, M. B., J.P., 5, Copthall Buildings, London, E.C.
 1909 Snell, William D., 27, Chapel Street, Stonehouse, Plymouth.
 1912 Soper, H. Tapley, F.R.Hist.S., The Monastery, Waverley Avenue, Exeter.
 1891 Southcomb, Rev. H. G., M.A., Orchard Dene, Budleigh Salterton.
 1906 Sparks, Miss F. Adeline, Suffolk House, Putney Hill, London, S.W.
 1906 Sparks, Miss Hilda Ernestine, Suffolk House, Putney Hill, London, S.W.
 1916 Square, J. Elliot, F.R.C.S., 22, Portland Square, Plymouth.
 1913 Stabb, John, Clanmarina, Torquay.
 1868*^pSTEBBING, Rev. T. R. R., M.A., F.R.S., Ephraim Lodge, The Common, Tunbridge Wells, Kent.
 1915 Stevens, Mrs. John, 26, Archibald Road, Barnfield, Exeter.
 1900 Stiff, J. Carleton, Alfoxden, Torquay.
 1885*Strode, George S. S., D.L., J.P., C.C., Newnham Park, Plympton.
 1911 Stuart, Capt. J. F., R.N., Fairlea, Bideford.
 1875*Sullivan, Miss.
 1899 Symonds, F. G., The Firs, Sturminster Newton, Dorset.
 1896 Swansea Devonian Society (*per* S. T. Drew), Swansea.

- 1899*Tanner, C. Peile, B.A., Chawleigh Rectory, Chulmleigh.
 1890 Tavistock Public Library, Bedford Square, Tavistock.
 1900*Taylor, Alfred, Sandycot, Bigbury-on-Sea, S. Devon.
 1886 Taylor, Arthur Furneaux, Ingleside, Hanwell, London, W.
 1912 Thurgood, Ernest Charles, Beverley, Dagmar Road, Exmouth.
 1903 Tindall, J., Marino, Sidmouth.
 1906 Toley, Albert, Devonian, Golden Manor, Hanwell, W.
 1908 Torquay Public Library, Torquay.
 1908 Treglohan, William Thomas, B.A., Conington, Clarendon Road, Watford, Herts.
 1902 Trelawny-Ross, Rev. J. T., D.D., Ham, near Devonport.
 1902**Trist, Pendarves.*
 1887 TROUP, Mrs. FRANCES ROSE, West Hill, Harrow-on-the-Hill.
 1876 TUCKER, Major R. C., J.P., C.A., The Hall, Ashburton (HON. AUDITOR).
 1910 Toker, Miss M. A. R., 21, Hanover Square, London, W.
 1905 Turner, Alfred, M.D., Plympton House, Plympton.
 1906 Turner, C. S., Kelbuie, Westbourne Terrace, Budleigh Salterton.
 1912 Turner, Mrs. Richard, c/o Sir G. Radford, M.P., Chiswick House, Surbiton, Surrey.
 1916†Turney, J. Davy, 5, Leigham Terrace, Plymouth.

 1916 Underhill, F., 7, Sutherland Road, Plymouth.
 1911 Ulyat, William Francis, Port Meadow, Totnes.
 1910 Upcott, Colonel Sir Frederick, C.S.I., K.C.V.O., 227, St. James' Court, Buckingham Gate, London, S.W.
 1916 Upham, Samuel Victor, Emscote, Fortescue Road, Preston, Paignton.

 1881 Varwell, H. B., J.P., Sittaford, West Avenue, Exeter.
 1912 Veitch, Peter C. M., J.P., Elm Grove House, Exeter.
 1884 Vicary, W., The Knoll, Newton Abbot.
 1902*Vidal, Edwin Sealy, 32, Sticklepath, Barnstaple.

 1916 Wainwright, Mrs., Courtenay Lodge, Petitor Road, St. Marychurch, Torquay.
 1893 Walker, Robert, M.D., 7, East Terrace, Budleigh Salterton.
 1907 Wall, Mrs., Watcombe Priors, St. Marychurch, S. Devon.
 1916 Walling, R. A. J., J.P., *Western Daily Mercury*, Plymouth.
 1895 Walpole, Spencer C., Church Farm House, Lancing, Sussex.
 1901 WARD, Rev. JOSEPH HEALD, M.A., 16, Hartley Road, Exmouth.
 1916 Ward, Thomas, 44, Headland Park, Plymouth.
 1913 Waterfall, Charles, F.L.S., Dalmeny, Shavington Avenue, Chester.
 1908 WATKIN, HUGH R., Chelston Hall, Chelston, Torquay.
 1904 Watts, Francis, Laureston Lodge, Newton Abbot.
 1907 WATTS, H. V. I., M.A., Edgemoor, Bovey Tracey, S. Devon.

- 1900 Watts, Mrs. R. I., Greenbank, Yelverton, S. Devon.
 1908 Weymouth, Cecil, 33, Park Road, St. Mary Church, Torquay.
 1900*WEEKES, Miss LEGA-, F.R.HIST.S., Sunny Nook, Rugby Mansions, West Kensington, London, W.
 1911 Wellacott, Rev. Thomas William, M.A., The Vicarage, Totnes.
 1911 Wells, Lionel Bury, Stonehanger, Salcombe, Kingsbridge.
 1915 Westlake, W. N., Hollacombe, West Avenue, Exeter.
 1900*Wethey, Charles Henry, The Green, Shaldon, Teignmouth.
 1872†Whitaker, W., B.A., F.R.S., F.G.S., Assoc. Inst. C.E., F. San. Inst., 3, Campden Road, Croydon.
 1893 White, T. Jeston, 39, Burne Street, London, N.W.
 1875 WHITE-THOMSON, Col. Sir R. T., K.C.B., D.L., J.P., Broomford Manor, Exbourne, North Devon.
 1907 Whiteway-Wilkinson, W. H., F.R.C.S.E., Inverteign, Teignmouth.
 1897 WHITLEY, H. MICHELL, M.INST.C.E., Broadway Court, Westminster (HON. GENERAL SECRETARY).
 1914 Wickham, Rev. H. M., St. John's Vicarage, Bovey Tracey, Devon.
 1883*Willcocks, A. D., M.R.C.S., Park Street, Taunton.
 1877*Willcocks, G. Waller, C.B., M.INST.C.E., Redthorn, 9, Rodway Road, Roehampton, London, S.W.
 1876*Willcocks, W. K., M.A., 6, Stone Buildings, Lincoln's Inn, London, W.C.
 1912*Willey, Mrs. Emilie L., Pennsylvania Park, Exeter.
 1914 Williams, Robert B. Powell, Edgemoor, Tavistock.
 1913 Williams-Lyouns, H. F., Great Inglebourne, Harberton, Devon.
 1893 Willis, W. H., Ivanhoe, 28, Keswick Road, East Putney, London, S.W.
 1912 Wills, Sir E. Chaning, Bart., M.A., F.C.S., Harcombe, Chudleigh, S. Devon.
 1911 Wilson, A. H., Sandridge Park, near Totnes.
 1916 Wimbush, Mrs., Altamira, Topsham, Devon.
 1875*WINDEATT, EDWARD, J.P., C.A., Heckwood, Totnes.
 1896 WINDEATT, Major GEORGE E., Totnes (HON. GENERAL SECRETARY).
 1896 Winget, W., Glen Almond, Cockington, Torquay.
 1916†Winnicott, J. F., J.P., Rockville, Mannamead, Plymouth (VICE-PRESIDENT).
 1872*Winwood, Rev. H. H., M.A., F.G.S., 11, Cavendish Crescent, Bath.
 1884*WOODHOUSE, H. B. S., 7, St. Lawrence Road, Plymouth.
 1907 Woolcombe, Rev. A. A., Leusden Vicarage, near Ashburton.
 1904 WOOLLCOMBE, GERALD D., Cranmere, Newton Abbot.
 1916 Woolcombe, J. Y., 6, Queen's Gate, Plymouth (VICE-PRESIDENT).

- 1901*Woolcombe, Robert Lloyd, M.A., LL.D., F.I.INST., F.R.G.S.,
F.R.E.S., F.S.S., 14, Waterloo Road, Dublin.
- 1891*WORTH, R. HANSFORD, MEM.INST.C.E., F.G.S., 32, Thornhill Road,
Plymouth (HON. LOCAL SECRETARY).
- 1913^pWORTHINGTON, Professor A. M., C.B., F.R.S., 5, Louisa Terrace,
Exmouth.
- 1909 Worthington, Rev. Jeffery, Chudleigh Cottage, Cullompton.
- 1912 Worthington, Robert, M.A., F.R.C.S., 30, East Southernhay,
Exeter.
- 1895*Wykes-Finch, Rev. W., M.A., J.P., The Monks, Chaddesley
Corbett, Kidderminster; and North Wyke, near North
Tawton.
- 1897 Yacht Club, The Royal Western, The Hoe, Plymouth.
- 1910 Yale University Library, New Haven, U.S.A., *per* Messrs.
Edward G. Allen and Son, 14, Grape Street, Shaftesbury
Avenue, London.
- 1900*Yeo, Miss Mary E. J., Holsworthy, Rossi Street, Yass, New
South Wales.
- 1900 Yeo, W. Curzon, 10, Beaumont Avenue, Richmond, Surrey.
- 1895 Young, E. H., M.D., Darley House, Okehampton.
- 1906 Young, Thomas, M.R.C.S., Coly House, Colyton, N. Devon.

The following Table contains a Summary of the foregoing List.

Honorary Members	.	.	.	.	.	1
Life Members	.	.	.	.	.	92
Annual Members	.	.	.	.	.	423
Total, 1st December, 1916	.	.	.	.	.	<u>516</u>

CORRIGENDA IN VOL. XLVII.

EXMINSTER HUNDRED.

- Page 195. As the Adelia de Redvers who held West Alvington held it by the gift of King John (*Hund. Rolls* 3 Ed. I., No. 32, p. 79; *Trans.* XLV., 195) the letter on p. 195 must have been addressed to William Briewere, not to William Warelwast, and its date must be nearer 1230 than 1130.
- Page 211. William de Vernon, earl of Devon, on 8 June, 1208, made over the advowson of Exminster church to Plymton priory (*Devon Fine* No. 59). The statement that the circumstances of the transfer were not known should therefore be replaced by the above.

DEVON COUNTY MEMBERS OF PARLIAMENT.

- Page 387, line 3, for "small town" read "borough."

INDEX.

By MAXWELL ADAMS.¹

- ABBEYS**: Angers, 192; Buckfast, 45; Buckland, 332; Malmesbury, 175; "Plymouth," 31; Torre, 330
Abbot's Bickington, 103, 306
Abbotsham, 307-10
Abbotskerswell, 159, 161-73
Abell, G. J., 86
Abercromby, Robert, 123
Aberystwyth: 19; National Library of Wales at, to receive free copy of *Transactions*, 19
Accounts, Statement of, 22, 23
Acland (in Landkey), 330
Acland: H. W. Dyke, 9; Sir John, 322, 329, 330, 339
Acridiidea, 276
Acton: Lord, 200, 209; his *Essays on Liberty*, 209
Adams: John, 131; Maxwell, 8, 24-6, 33, 101, 154, 155; his *Indexes to the Printed Literature of Exeter and North Devon*, 155; S. P., 8
Address of the President (Allen), 55
Aethelstan. See *Athelstan*
Alare, Philip, 212
Alauna Sylva, 348
Albemarle, Duke of, 326, 333, 337
Albert Memorial, The Royal, Exeter, 47
Albury Park (Surrey), 50
Aldous, J., 120
Aldridge, Dr., 33
Alexander: J. J., 8, 86; on *The Devon County Members of Parliament—The Stuart Period*, 320; on *The Athelstan Myth*, 174
Alfred the Great, 174, 176, 178
Alfred's Tower, 362
Alga, 149
Alhstan: 179; various personages in Wessex history bearing the name, 179
Alleigh, Bishop, 264
Allen: E. J., 8, 9, 31-3, 38, 55; *Presidential Address*, 55; Ethel, 38; Rev. G., 50
All Hallows', Exeter, 291
Alphington, 145
Altarnun, 182
Alverdiscott, 115, 117, 144
Amersham Hall, Caversham, 48
Amery, J. S., 8, 24, 25, 85, 101, 157, 159
Amory, Sir John, 46
Amygdaloids. See *Dunstones*
Andrew, Sidney, 8
Andrews, R. H., 33
Anemones, British, 56
Angers: 192; Benedictine Abbey at, 192
Animated Nature (Goldsmith), 284
Anisolabis annulipes, 268
Anne, Queen, 329
Anning, James, 298
Anthony (Cornwall), 333, 339
Aragon, Katharine of, 30
Arlington, 138
Armada Day, Celebration of, 37
Armitage, —, 190
ARMS: Arscott, 114; Croker of Lynham, 296; Dennis, 119; Fortescue, 119; Fry, 296; Hoblyn, 114, 134; Holway, 296; Luttrell, 119; Mill, 118; Prideaux, 113; Rolle, 104; Saffin, 292; Shapcott, 296; Southcott, 296; Southcott and Collyns quarterly, 294, 295; Symons, 114; Taner, 296; Upton, 184; Yeo, 123
Arnold: Matthew, 180; his *For-saken Merman*, 180
Arscott, Arms of, 114
Arthur, King, 190, 345
Arviragus, 341, 342
Ash, Idlesleigh, 124
Ash House, Musbury: 293; Chapel of, 293

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- Ashburton, 8, 9, 30, 86, 159, 161-73, 321, 335, 336, 338
 Ashbury, 333
 Ashcombe, 184
 Ashe, 322
 Ashford, 137, 138
 Ashprington, 313, 316
 Ashwater, 102, 104, 142
 Athelstan : 174-9, 345; his character, 175; holds Witan at Exeter, 175; partitions See of Crediton, 175; conquers Cornwall and West Devon, 176; date of conquest, 177; authorities for, 177; triumphal entry into Barnstaple, 177; his Cornish expedition, 179; William of Malmesbury's account of, 175, 176; benefactor of Malmesbury Abbey, 175; on *The Athelstan Myth* (Alexander), 174
 Atkins, Rev. T., 183
 Atkinson : G. T., 74; his researches, 74
 Auditory organs (Orthoptera), 271
 Aulus Plautius, 350
 Averie, John, 133, 134
 Axminster : 9, 292, 297-9; Bequest to Charity School at, 292; Fairs and Market, 297, 301
 Axmouth, 294, 301, 340
 Axtown, 49
 Ayer : Cecil, 300; Marshall, 300
 Ayspton (Ashburton), 30
 Ayssecumb, 181
 Ayssheton, Nicholas, 216
 Babbage, John, 105
 Baker : Sir Samuel White, 9; T. (Mayor of Plymouth), 8, 27
 Baldwin, Richard Fitz (Sheriff of Devon), 34
 Balleine, Rev. J. A., 26
 Bampfylde : Sir Amias, 331, 332; Sir Coplestone, 327, 329, 337-9; Jane, 332; John, 322, 331, 338, 339; Sir John, 338; Richard, 331; Ursula, 381
 Baring-Gould : Rev. S., 8, 9, 24, 25, 39, 99; his *Songs and Ballads of the West*, 39; *Folk-songs of the West*, 39
 Barnard : E. E., 124, 128; J. W., 124, 128
 Barnstaple : 9, 29, 52, 107, 111, 113, 115, 128, 132, 138, 159, 161-73, 177, 190, 196, 320, 324, 325, 336, 337, 339; The Atheneum, 52; Ebberly Lawn School, 52; Grammar School, 52; Athelstan's triumphant entry into, 177; the Castle, 191; Archdeaconry of, 101; Botanical District, 137; *Records* (Chanter), 52; *Barnstaple during the Civil War* (Cotton), 332
 Barran, Charles, 160
 BARROWS : 99; *Report of the Committee on* (Worth), 99
 Bartlett : Ann, 300; Ellis, 291; Yedie, 297
 Bassett : Catherine Mary, 45; H., 45
 Bastard, William, 335, 339
 Bate : C. Spence, 9, 28, 56; on *Sessile-eyed Crustacea*, 56
 Bateman : Hester, 129; Peter, 127; William, 127
 Bath, Earl of, 339
 Batt, Susan, 297
 Beaford, 115-17, 308, 310
 Beare, Mary, 299
 Beaumaris, 339
 Beaumaris Castle, 192
 Beavis : William, 19; donor of silver flagon to Sowton Church, 19
 Beaworthy, 86
 Beebe, Rev. W. N. P., 8
 Beer, 298
 Bellamy, Sir Joseph, 8
 Belleisle, Ayr, 53
 Bequests : to Charity School, Axminster, 292; to Charity Schools, Exeter, 292
 Bere Alston, 86, 159, 161-73, 321, 323, 324, 332
 Bere Ferrers, 153
 Berkeley : Sir Henry, 337; Margaret, 337
 Berkhamstead Castle, 191
 Berry Pomeroy, 330-2, 338, 340
 BIBLIOGRAPHY : *Report of Committee on* (Morris), 154; in various publications, 155; in Periodical Literature, 155
 Bibliotheca Devoniensis (Davidson), 154
 Bickington, Abbots, 103
 Bickleigh, 41, 334, 340
 Bidder, G. P., 9
 Bideford, 9, 86, 126, 137, 139, 305
 Biéatrix, his researches, 62
 Bigbury, 287
Birds of the South Hams District (Elliot), 283
 Birkin (Yorks), 50
 Bishop's Nympton, 144
 Bishop's Tawton, 119, 139, 140
 Bishopsteignton, 313

- Blackall** : Alderman E., 8 ; Bishop, 266
Blackawton, 152, 313, 315, 316
Black Friar's Monastery, 31
Blackler, T. A., 8
Black Torrington, 102-05
Blake, Thomas, 116, 124
Blattodea, 269
Blenheim, Battle of, 329
Bliborow, Lincolnshire, 296
Blight, Winifred, 38
Blinch, Richard, 126
Blowedonne, 181
Blundell's School, 46, 47
Body, Martin, 8
Bogan, William, 193
Bolleit : (Cornwall), 176 ; battle of, 176
Bolventor, 180
Bombs, volcanic. *See Dunstones*
Bond : J. T., 49 ; Peter, 37, 42
Boneville, Lord, 215
Bonnet, E., 153
Boone, Thomas, 324
Bordeaux, 206, 341
Boringdon, Barons of, 40
Boringdon : 39 ; Excursion to, 39
Boringdon House, description of, 40
Borley : J. O., 74 ; his researches, 74
Botanical Districts : Barnstaple, 137 ; Torrington, 143 ; South Molton, 144 ; Exeter, 145 ; Honiton, 145 ; Torquay, 146 ; Plymouth, 152 ; Tavistock, 153
BOTANY : *Report of the Committee* (Hiern), 137 ; *Phenological Notes* (Larter), 151 ; *Journal of*, 138, 139, 146-8, 152, 153
Bovey (Beer), 291
Bovey Tracey, 150, 330
Bowden, 322, 330
Bowring : Edward, 43 ; Emma, 43 ; Sir John, 9 ; Sir Thomas Benjamin (obit.), 43
Boyton, 102, 110, 114, 133
Bracken : C. W., 8, 36, 38, 39, 153 ; on the *Orthoptera of Devon*, 267
Braddon : Major, 47 ; Marion, 47
Bradfield, Cullompton, 53
Bradford, 102, 105, 310
Bradworthy, 106, 111
Bramber Castle, 191
Bramble grasshoppers, 274
Brandridge, 114
Brannell : 101 ; St. Stephen in, 101
Branscombe, 145, 146, 291
Brantingham, Bishop, 263
Brasenose College, Oxford : 264 ; founded by Bishop Smyth, 264 ; his life by Churton, 264
Bratton Fleming, 139
Braunton : 137-9 ; Burrows, 140 ; Vicar of (Rev. E. R. Gotto), 50
Brause, William de, 193
Bray, Mrs., 327
Brecknock, 334
Brent, J., 129
Breton, Rev. H. H., 41, 99, 100
Brett : John, 335 ; Mary, 335
Brewer, Bishop, 263.
Bridgerule, 106
Bridport, 52, 53
Brimley, 150
Bristol, 324, 347
Brisworthy Stone Circle, 99
Britain, early kings of, 344
British Crustacea, 55
Brixham, 56, 147, 338, 340
Broadclyst, 339
Broadhurst, Hon. Maynard, 46
Broadoaze, 185
Broadsands, 151
Broadwoodwiger, 132-4
" Brodestone, The " (Totnes), 195
Brokenshire, F. A., 138, 144
Bronescombe, Bishop, 263
Brooking-Rowe : J., 9, 33 ; on the *Ecclesiastical History of Plymouth*, 29 ; Mrs. J., 33
Broom-park, 180
Bruges, 209, 210, 216
Brunanburgh : 177 ; battle of, 174, 177 ; site of, 174, 175, 177
Brushers-hill, 180
Brushfield, T. N., 9
Brut Gr ab Arthur, 347, 348
Brut Tysilio, 345, 347-9
Brutus, 349
Bryce, Lord, 200
Buckfast Abbey : 45 ; re-established by Lord Clifford, 45
Buckfastleigh, 9, 313, 314
Buckland Abbey, 332
Buckland Filleigh, 116-19
Buckland-in-the-Moor, 313
Buckland Monachorum, 153, 322, 331, 339
Bude Canal, 144
Budleigh Salterton, 146
Bulkeley, Thomas, 339
Bulkworthy, 102, 107, 306
Burdon, John, 102, 105
Burghley, Lord, 264
Burgundy, Duke of, 209, 210
Burhred, King of Mercia, 178
Burnard : Edward, 301 ; Robert, 8, 9, 24, 25, 99 ; Sarah, 301

- Burnet, Bishop, 265
 Burns : Robert, 289 ; on Corn-crakes, 289
 Burton, Robert, 216
 Butler's *Hudibras*, 324
 Buzzards, 287
 Bye-Laws and Standing Orders, 15
 "Cabal," The, 43
 Cadenius, Walter, 344 ; his identity with Walter de Mapes (poet), 344
 Cadwalladr, 344
 Caen, 210
 Caer Benhwelgoet, 346
 Caer Pensaulecoit, 348, 349, 362
 Caerphilly Castle, 192
 Calais, 208, 210
 Calenius, Walter, 345
 Callington, 331, 332, 335, 339
 Calstock, 336, 340
 Calverley, 290, 295
 Calwoodleigh, 290
 Camden, Sir W., 343
 Cane (Caen), Robert, 209-11, 215
Canon in Residence, The : (Pearson), 260 ; use of title discussed, 260
 Cantelupe : Family of, 193 ; George de, 195
 Canterbury : 198, 262, 264, 351 ; St. Augustine's Priory, 198
 Caractacus, 342
 Carew : Elizabeth, 334 ; John, 325, 329, 333, 339 ; Peter, 334 ; Sir Richard, 333
 Carlyle on *Cromwell*, 334
 Carnac, Prehistoric remains at, 38
 Carr, Abraham, 297
 Carr-Smith, Miss Rose E., 25, 137
 Cartsford, Manor of, 35
 Carwithen, 292
 Cary, Sir George, 322
 Castle : John, 333 ; Mary, 333
 "Castle Terrible" (Launceston), 190
 CASTLES : Barnstaple, 190, 191 ; Beaumaris, 192 ; Berkhamstead, 191 ; Bramber, 191 ; Caerphilly, 192 ; Colchester, 191 ; Conway, 192 ; Exeter, 189 ; Harlech, 192 ; Hertford, 191 ; Launceston, 190 ; Liskeard, 190 ; London, 191 ; Lydford, 190, 191 ; Okehampton, 190, 191 ; Pevensey, 191 ; Plympton, 189 ; Plymouth, 31 ; Restormel, 190 ; Tintagel, 190 ; Totnes, 189, 193-5 ; Tregony, 190 ; Trematon, 189, 190 ; Truro, 190 ; of Devon and Cornwall, 189-93 ; Norman, 190, 191 ; Welsh, 192.
See Clark
 Cathedral Chapters : History and practice of Exeter, 263-6 ; revision of Statutes of, 264
 Cattewater, 36
 Cave, Right Hon. G., 9
 Caversham, Reading, 48
 Celandine (swallow-wort), 288
Century of English History (Ramsey), 207, 208, 211
 Chair Penhwylgoet, 346
 Chalk, Rev. E. S., 8, 86
 Challacombe, 139
 Chamberlain, Rev. P. G., 33
Chambers's Dictionary, 207
 Chanter : Rev. J. F., 8, 19, 24-6, 52, 85, 86, 99, 101, 103, 117, 136 ; on *Barnstaple Records*, 52 ; *Report of Committee on Church Plate*, 101
 Chapman : Rev. C., 8, 9, 25 ; S. C., 160
 Chapple, W. E. P., 8, 25
 Chapters of Cathedrals : 262, 263 ; New Foundation, 262 ; Old Foundation, 263
 Charity Schools : Axminster, 292 ; Exeter, 292
 Charles I : 19, 265, 321, 323-5, 327, 331, 333 ; silver flagon of his time, 19 ; Charles II, 40, 326, 329, 333, 337
 Charleton Cliffs, 285
Chelidon : (the swallow), 288 ; (the herb), 288
 Cheriton Bishop, 305
 Chert. *See Dunstones*
 Chichester : C. H., 119 ; Miss, 25, 160
 Chiff-chaffs, 283, 284
 Chilcott : E. W., 8 ; Jos., 300
 Chope, R. Pearse, 8, 24-6, 85, 86, 137, 154, 199
Chronicle of the Kings (Tysilio), 345
Chronicles of Fabian, 209, 215
 Chudleigh, 43, 146
 Churchill : Jane, 293 ; William, 298, 300
 CHURCH PLATE : *Report of Committee on* (Chanter), 101 ; *Illustrated* (Jackson), 112, 118, 119, 126 ; Elizabethan, 102 ; *Makers of* : Abercromby, Robert, 123 ; Aldous, J., 120 ; Averie, John, 134 ; Babbage, John, 105 ; Barnard, E. E., 124, 128 ; J. W., 124, 128 ; Bateman, Hester, 129 ; Peter, 127 ; William, 127 ;

- Blake, Thomas, 116, 124; Burdon, John, 102, 105; Cook, Thomas, 132; Cory, John, 110; Cotton, John, 102, 107, 111, 115; Elston, John, 106, 113, 118, 120, 130-2; Philip, 13; Emes, John, 106; Ferris, George, 116, 117; Fox, George, 121; C. T., 121; Goose, A., 128; Gurney, Richard, 132; Hardwick, Henry, 102, 109; Hicks, Joseph, 116, 129; Holford, Thomas, 120; Hosking, Henry, 113; Houston, George, 127; Jones, John, 102, 107-10, 112, 115, 119, 133, 135; Robert, 127; Keith, Charles, 131; Lambe, John, 122; Lee, Roger, 125; Martin, Hall and Co., 105, 130; Matthew, Thomas, 102, 113, 115, 120, 132; Neale, Richard, 119; Raine, Richard, 113; Rolles, Philip, 134; Seatown, George, 108; Servante, H., 120; Slade, Daniel, 108; Juger, John, 114; Vincent, Edward, 103; Webber, J., 123; Welles, Samuel, 111; Whipham, Charles, 121, 125; Williams, Zachariah, 120; Wippell and Co., 120-2, 130; Wright, Charles, 108, 121, 125; Young, James, 109
- Churchton, 333
- Churston Common, 150
- Churton's Life of Bishop Smyth, 264
- Cirencester, Richard of, 349
- Clapham, 50
- Clarence, Duke of, 206
- Clark: J. G., 190; on *English Mediæval Military Architecture*, 190
- Clarke: Miss Kate M., 8; on *The Baptismal Fonts of Devon*, 302
- Claudius, 341, 342
- Clawton, 102, 103, 107, 144
- Clayden, A. W., 8, 9, 32
- Clay-Finch, Mrs., 8
- Clayhanger, 309
- Clayworks: at Shaugh, 40; at Wotter, 39-41
- Cleaveland, Ezra, his *Noble House of Courtenay*, 338
- Cledauc, 178
- Clerical Association, 51
- Clifford, Miss C. M., 145, 147
- Clifford: Col. E. T., 8, 29, 30, 37; introduces President, 32, 33; on *Robert Wenyngton, an Old Sea-Dog of Devon*, 199
- Clifford: Lewis Henry Hugh (Baron of Chudleigh), 9, 43, 44 (obit.), 45; his character, 44; public services, 44; re-establishes Buckfast Abbey, 45; A.D.C. to King Edward VII, 44; entertains King George and Queen Mary, 45; Charles Oswald Hugh, 45; Hon. William Hugh, 45; succeeds to title, 45; Mabel Ann, 44; Sir Thomas, 43; Arms of, 45
- CLIMATE OF DEVON: *Report of Committee on* (Worth), 157; list of observers, 159, 160; list of observing stations, 159, 160; statistics for 1915, 161-73; weather table for 1915, 159; summary of statistics for 1915, 161-73
- Clinton, Lord, 9, 115, 122, 335
- Clove, Edward, 297
- Clowes' *History of the Royal Navy*, 205, 206
- Clyfton, Gervase, 201, 214
- Coal-fish (*Gadus virens*), 65
- Coats, Charlotte Margaret Lothian, 53; George, 53
- Cockington Wood, 150, 151
- Cockroaches, 269
- Cod: life history of, 59, 63-6; size of, according to Hjort and Petersen, 63, 64
- Coffinswell, 146, 147, 313
- Coffleet, 180
- Coham (Black Torrington), 105
- Coham: Holland, 104, 105; Mary Anne, 130
- Coke upon Littleton*, 264
- Colborne, Hon. Mrs., 25, 137
- Colchester Castle, 191
- Coleridge: J. D., 9; Lord, 8, 9, 28; Lord Chief Justice, 45
- Coleton, 181
- Coleton, I. de, 182
- Collaton Wood, 186
- Collier, Sir R. P., 9
- Colliton, 301
- Collins: Ann, 291, 292, 294, 295; Dorothea, 291; Joanna, 292; William, 291, 292, 294, 295
- Collyton, 301
- Colville, Sir John, 207
- Colvin: Ian, 199; his *Germans in England*, 199
- Colwell, 291, 292, 294, 295
- Colyton, 335
- Combe-in-Teignhead, 313
- Combe Martin, 137
- Combpyne, 298

- Committees appointed by Council, 24, 25
- Committees: Reports of; Provincialisms (Laycock), 85; Barrows (Worth), 99; Church Plate (Chanter), 101; Botany (Hiern), 137; Bibliography (Morris), 154; Climate (Worth), 157
- Commons Journals*, 325, 328, 334
- Commonwealth, 333
- Compton (Plymouth), 130
- Compton-Efford Grit, 217
- Conan, Bishop, of St. Germans, 175
- Concarneau, researches by Fabre-Domergue and Biéatrix in laboratory of, 62
- Condy: Nicholas, 39; his *Cothele*, 39
- Cones: Dr. Elliot, 288; on Redwings, 288
- Conocephalus dorsalis*, 275
- Constantine of Scotland, 178
- Conversazione in Athenæum, 38
- Conway Castle, 192
- Conybeare: Edward, 351; his *Roman Britain*, 351; Henry, C. A. (obit.), 45, 46; W. D. (Dean of Llandaff), 45
- Cook, Thoman, 132
- Cookbury, 101-03, 108, 110
- Coombes, John G., 159
- Coplestone House, 159, 161-73
- Copstone, John, 215
- Cornerakes, 289
- Cornu of Lyneham, 182
- Cornworthy, 313, 316
- Corsellis, Isabella, 291
- Cory, John, 110
- Cothele*, by Nicholas Condy, 39
- Cotton, John, 102, 107, 111, 115, 128
- Cotton, R., his *Barnstaple during the Civil War*, 332
- Cotula anthemoides*, 38
- Council: Members of, 8; Report of, 19
- Countisbury: 50; Hill, 140
- Countrymen in Council* (Thornton), 51
- Courtenay: Elizabeth, 338; Francis, 322, 331, 338, 339; Margaret, 338; Sir Philipe, 215; Sir William, 327, 331, 338, 339; William Henry, 327; Sir William's reception of William of Orange at Ford House (Newton Abbot), 338; *The Noble House of* (Cleveland), 338
- Courtis, T., 33
- Cowie, Dean, 9
- Cowsic Valley, 159, 161-73
- Craigendinnie, Aboyne, 54
- Crealey, 290
- Crediton: 9; Eadulf, Bishop of, 175
- Cresswell, Miss B. F., 8, 25, 26, 154
- Crewebera, 181
- Crews, F. H. E., 33
- Crickets, 271
- Croft, Sir Alfred, 8, 9, 24, 25, 86, 157, 159
- Croker: John, 290, 295; Mary, 290, 295
- Croker of Lynham, Arms of, 296
- Cromwell; Oliver, 324-6; Richard, 326, 327, 336
- Cromwell* (Carlyle), 334
- Crustacea: British, 55; Gosse on, 56; Spence Bate and Westwood on, 56
- Cullompton, 9, 53, 86, 145, 159, 161-73
- Cumming, J., 144, 145
- Curiosities of Literature* (Disraeli), 324
- Curris Triumphalis*, 186
- Dahl: K., 77; his researches, 77
- Dainton Down, 150
- Dallinger, Rev. W. H., 9
- Daniel: Thomas, 202, 205; Mrs., 146
- Dannevig, H., his discoveries, 57, 58
- Danyell, Thomas, 202, 205
- Darley, Theodore, 293
- Dartmoor, 25, 36, 51, 159
- Dartmouth, 9, 152, 196, 199, 201, 202, 206, 208, 210, 212-14, 216, 313, 317, 321, 324, 325, 330, 335, 337
- Dart, River, 45
- Daubeney, C. G. B., 9
- Davey, Robert, 334
- Davidson, J., *Bibliotheca Devonensis*, 154
- Davy, Lady, 152
- Dawlish, 9, 146-9
- Day, Fred., 160
- Dayman, F. S., 46
- Dean and Canons of Windsor, 299
- Dean Prior, 322, 330, 340
- Denbury, 317, 318
- Dene, Margery, 296
- Denmeade, Miss K. M., 144, 147, 149
- Dennis, Arms of, 119
- Devil's Tor, 159, 161-73
- Devon and Cornwall Notes and Queries*, 51, 260
- Devon County Members of Parliament, Part V* (Alexander), 320

- Devon, Earl of, 9, 183, 201, 205, 211, 214
 Devonport: 9, 28, 48; Watershed, 159, 161-73
Devonshire, History of (Worth), 349
 Dewey, H. *See* *Dunstones*
 Diabase. *See* *Dunstones*
 Dialect, Provincialisms, 86-98
Dictionary of National Biography, 328, 330
 Disraeli's *Curiosities of Literature*, 324
 Dittisham, 311, 317
 Doddridge: John, 336, 337, 339; Sir John, 337; Pentecost, 337
 Doe, G. M., 8, 24, 160, 305
 Dolerite. *See* *Dunstones*
 Dolomitic limestone. *See* *Dunstones*
 Dolton, 115, 119
Domesday, The Exeter, 192
 Donaldson, Rev. E. A., 101
 Dorchester, 300
 Dover, 56, 209
 Dowland, 115, 120
 Drabble, Dr., 146
 Drake: Sir Francis, 37, 38, 213, 322, 323, 331, 332, 339; tribute to his memory, 37; his *The World Encompassed*, 332
 Drake: Sir Bernard, 322, 331; Elizabeth, 331; Francis, 323, 334; Jane, 332; John, 322, 330, 331, 339; Thomas, 331, 332; F. Morris, 8
Drake, The Family and Heirs of (Elliott-Drake), 332
 Drakes of Ashe, 322
 Drew, Henry, 216
 Drewsteignton, 146
 Druce, Mr., 147, 153
 Dryden: John, 43; his *Hind and Panther*, 43
 Dublin, Archdeacon of, 262
 Duck: Edith, 290; Richard, 290
 Duke, H. E., 8
 Dulcis, 291-3, 295
 Dulcishayes, 290, 291
 Duncan, A. G., 8
 Dungarth, King of Cornwall, 178
 Dunn: Miss Mary Rouse, 86; Matthias, 57; his discoveries, 57
 Dunning, James, 298
 Dunsford, 50, 340
 Dunstan, Bishop, 177, 179; his history, 177; his letter to Ethelred, 178, 179
Dunstones, The, of Plymouth, and the Compton-Efford grit: (Worth), 217; undetermined problems, 217; area covered by re-survey, 217; unsympathetic military authorities, 218; probable derivation of term "Dunstone," 218; Geological Survey Memoir (Sheet 348), 218; use of terms *dyke* and *carbonate*, 219; petrology of the dunstones, 219; felspar laths, 219; porphyritic felspar, 221; pseudomorphs in felspar laths after felspar phenocrysts, 222; *Iron Ores*, 222; *Pyrites*, 223; *Sphene*, 223; *Quartz*, 223; *Augite*, 223; *Chlorite*, 223; *Carbonates*, 224; *Vesicles*, 224; *Amygdaloids*, 225; minerals of amygdaloids, 225-7; junctions of dunstone and slates, altered slates, 227; chloritisation of slates, 230; silicification of slate to chert, 231; dolomite lenticles in chert, 234; dunstone-and-slate rocks, 237; *Schalstein Tuffs*, 240; *Typical Schalsteins*, 242; *Pillow or Spheroidal Structure*, 242; *Dolomitic limestones*, 243; The Wearde and Compton-Crabtree grits, 243; Compton-Crabtree grits, 244; pebble bed at Crabtree, 246; relations of dunstone, grits and slates at Crabtree, 250; Wearde grits and dolerite, 252; undetermined rock at Camel's Head, 256; conclusions, 257; reference to illustrations, 258
 DUNSTONES OF PLYMOUTH:—
 Altered slates, 227; *Chloritisation of*, 229, 251; *Dolomitisation of*, 229, 234; *Silicification of*, 229; *Silicification to chert*, 230, 231, 236; *Silicification to granular rock*, 230, 236
 Amygdaloids, 225
 Amygdaloids, minerals of; *Calcite*, 225, 226, 242; *Chlorite*, 225, 226, 242; *Chlorite and calcite*, 225; *Chlorite and dolomite*, 225; *Chlorite, dolomite and felspar*, 225; *Chlorite and felspar*, 258; *Chlorite and quartz*, 225, 226, 258; *Dolomite*, 225, 226, 228; *Felspar*, 225, 226; *Pyrites*, 227; *Quartz*, 225-226; *Vermicular chlorite*, 225
 Augite, 223
 Bombs, volcanic, 252
 Calcite, 224
 Carbonates, 224

- Dunstones of Plymouth (*contd.*)—
 Chert, 255; dolomite in, 234;
 dolomite, lenticular, in, 235;
 in contact with diabase, 236
 Chlorite, 223; spheroidal, 225;
 vermicular, 225
 Clay-slate needles, 235
 Dewey, H., 232
 Diabase, 223, 236, 252
 Dolomite in chert, 255; in
 felsite, 247
 Dolomitic limestone, 234, 243,
 246, 251
 Dolerite, ophitic, 252
 "*Dunstone-and-slate*," 237, 251
 Dunstone, structureless, 242
 Felsites, 247; pyrites in, 249
 Felspar, crystal form, 219
 Felspar laths, 219; bent, 220,
 242; flow structure of, 220;
 in amygdaloids, 225; St.
 Andrew's Cross, 222
 Felspars, porphyritic, 220, 242;
 broken, 222; inclusions in,
 221; pseudomorphs after, 222;
 replacement by chlorite and
 carbonate, 222; reabsorbed,
 221; size of, 221; skeleton
 crystals, 221
 Felspar, secondary growth of, 248
 Felted structure, 219
 Flett, Dr. J. S., 231, 232, 240, 252
 Geological Survey, 227
 Grits, 241, 245
 Grit, Compton - Efford, 217;
 Wearde, 255; Wearde and
 Compton-Crabtree, 243
 Groundmass, 219
 Iron Ores: *Distribution of, and*
form, 222, 223; *Ilmenite*, 222;
Leucoxene after ilmenite, 222;
Pyrites, 222, 223; *Titaniferous*
magnetite, 222
 Junctions of dunstone and slate,
 227
 Lapilli, 241
 Leucoxene, 219, 222
 Limestone, 242, 243
 Limestones, dolomitic, 243
 Mica, 247, 256
 Micropegmatite, 247; secondary
 growth of, 248
 Mudstone, 255
 Mylonite, 257
 Oligoclase-albite, 222
 Olivine, 223
 Pebble-bed, 246
 Pebbles, cracked and recemented,
 247
 Pebbles, felsitic, 247
 Pillow structure, 219, 231, 233,
 242
 Quartz, 223; fluid inclusions in,
 226, 248, 249
 Quartzite, 255
 Schalstein, 227; typical, 242;
 tuffs, 240
 Slate inclusions in dunstone, 229,
 237
 Spheue, 223, 256
 Survey Map, 239
 Survey Memoir, 231, 233, 240,
 241, 243, 252
 Teall, Sir J. Harris, 226
 Titanic iron ores, 219
 Tuffs, 239, 256
 Ussher, W. A. E., 231, 232, 236,
 243, 245, 252, 255
 Vesicles, 218, 224; concentric
 lines of, 242; borders of, 227
 Volcanic-grit, 244
 Watts, Prof., 243, 252, 255
 Wearde and Compton-Crabtree
 Grits, 243
 Worth, R. N., 241, 243, 245,
 256
 Zircon, 256
- Localities:—Austin Fort, 225,
 226; Basket Street, 227;
 Bedford Street, 227; Bland-
 ford Road, Compton, 243;
 Bloomballs Quarry, 222, 223,
 224, 226; Brickfields, Devon-
 port, 221; Camel's Head, 256;
 Camelshead Bridge, north of,
 236; Compton, 256; Compton
 Hill, 242; Compton Valley,
 219; Compton Village, 244;
 Coombe, King's Tamerton,
 220, 221, 222, 224; Coypool,
 Marsh Mills, 237; Crabtree,
 223, 238, 241, 243, 244, 246,
 251; Crabtree, by road, 245;
 Crabtree, old quarry, 245;
 Deer Park Farm, Efford, 221,
 224; Defiance Halt, 218, 255;
 Defiance Gardens, 255; De-
 fiance Lawn, 252; Defiance
 Quay, 252; Devonport Brick-
 fields, 221; Devonport Work-
 house Quarry, 221, 231, 233,
 234; Dorsmouth Hill, east,
 224; west, 225, 227, 230;
 Drake's Hill, near Weston Mill,
 239; Drake's Island, 218;
 241; Efford, Deer Park Farm,
 221, 224; Ernesettle, 254;
 Farm Quarry, Marsh Mills, 223;
 Ford, 221; Fursdon, near, 223;

- Dunstones of Plymouth (*contd.*)—
 George Street, 241; Goosewell: 243; Henn Point, 223, 231, 233, 234, 252; north of, 234; west of, 243; Honicknowle, 223; Honicknowle, west, 238; Keyham Quarry, 221, 222; Leigham, 221, 225; Linketty Lane, 221; Lovell Road, Thornhill, 220, 233, 242; Manadon Hill, 222; Plaistow Quarry, 236; Plympton, 218; Prudential Buildings, 227, 241; Redlands, 221; Russell Avenue, Tavistock Road, 222; Saltash, 233, 252; Saltash Bridge, 256; Saltram, Sawpit, 221, 233; St. Andrew's Churchyard, 227, 231, 234; St. Budeaux, 223, 234, 239; Somerford Terrace, 226, 237; Tamerton Foliot, 218; Townsend Hill, 223; Wearde, 252; Wearde Quay, 252; Weston Mill Creek, 219, 233, 236; Widey, near, 221, 222, 223, 226; Widey Court, near, 258; Woodford, 231
- Durham, 262
 Dyfed, Howel the Good, King of, 174, 178
 Dymond, A. H., 24
 Dynham, Sir John of, 215
- Eadulf, Bishop of Crediton, 175
 Eamot, Treaty of, 174
 Earle, Archdeacon, 9
 Ear-stones of fishes (Otoliths), 67
 Earwigs: 268; "Tavistock" (*Anisolabis annulipes*), 268
 East Anstey, 144
 East Lyn Valley, 141
 East Oggwell, 340
 East Putford, 102, 111
 Ebberley Lawn, Barnstaple, 52
 Eccleshall, near Stafford: 261; residence of the Bishop of Lichfield, 261
Ecclesiastical Law (Phillimore), 264
 Edgar, King, 39
 Edgcumbe, Sir Richard, 193
 Edmer, 180
 Edmonds, Rev. Chancellor, 9
 Edon, Alexander, 201, 215
 Edward: the Confessor, 192; the Elder, 174, 178; I, 260; II, 321; III, 191; IV, 213; VI, 197; VII, 44
 Egbert, King, 177, 178
- Eggesford, 134
 Elford, Rev. Walter, 108, 110
 Elford of Longstone, 41
 Elizabeth, Queen, 204, 323, 340
 Elliot: E. A. S., 8, 24; *Twelve Months' Notes on the Birds of the South Hams District*, 283
 Elston: John, 106, 113, 118, 120, 130-2; Philip, 131
 Elworthy, F. T., 9
 Emes, John, 106
 English: Joseph Thomas, 106; Rachel Ann, 106
 Enys, John D., 9
 Erisey (Ruan Major), 334
 Erisey: James, 333, 334, 340; Richard, 334
 Ermington: 34, 180; Strodes of, 34
Essays on Liberty (Acton), 209
 Ethelred, the Unready, 177, 178
 Euplexoptera, 267
 Evans: H. M., 8, 24, 36; W. J. O., 86, 159
 Exbourne, 144
 EXETER: 9, 19, 48, 86, 106, 108, 112, 113, 117, 118, 133, 135, 159, 161-73, 176, 189, 196, 213, 260-3, 265, 292, 305, 320, 325, 332, 333, 336, 338, 340-2, 344, 346-51; its ancient names, 342, 344; under Athelstan, 176; Athelstan holds Witan at, 175; Bishops of, 215; (Dr. Robertson), 8, 9; (Dr. Temple), 9; registers of, 53; Hospital of St. John, 47; Botanical District of, 145; Castle of, 189; Charity Schools, 292; Bequest to Schools, 292; History and practice of Cathedral Chapter, 263-6; revision of Statutes of, 264; siege by Vespasian, 341-3; authorities for doubting it, 342, 343; *History of* (Freeman), 341; *History of* (Oliver), 343; Exeter College, Oxford, 291, 292; *Exeter Domestay*, 192; Exeter, St. Thomas, 145
 Exmoor, 50, 141
 Exmouth, 9, 86, 330
- Fabre-Domergue: 62; his researches, 62
Fabyan, Chronicles of, 209, 215
 Fairfax, Sir Thomas, 196
 Fairs and Markets of Axminster, 301
 Falcons, 287
 Farnham, 351

- Farringdon, 19, 290, 305
 Farringdon Church, Monumental inscriptions in, 296
 Felsites. *See* *Dunstones*
 Felspar. *See* *Dunstones*
 Fen-Ottery, 300
 Fernhayes, 181
 Ferrers, family of, 181, 182
 Ferris, George, 116, 117
 Fieldfares, 287
 Finch, Anne, 297
FISHES: age of, 65-8, 71-6; ear-stones of, 67; eggs of, 57, 58; larval period, 59; of round fishes, 60; of flat fishes, 61; their life-history, 59; literature relating to, 82-4; researches by: Atkinson, 74; Bate, 56; Biétrix, 62; Borley, 74; Dahl, 77; Dannevig, 57, 58; Dunn, 57; Fabre-Domergue, 62; Garstang, 70, 74; Heincke, 67; Hjort, 63, 64, 76; Hoffbauer, 65; Johansen, 58; Krogh, 58; Lee, 74, 76; Masterman, 66; Petersen, 63, 64; Redeke, 62; Sars, 57; Thomson, 65; Wallace, 69-71, 76
 Fisher: Arthur (obit.), 46; Stephen, 46
 Fitzford, 338
 Fitzwarren, Lord, 215
 Fleming, Canon, 262
 Flett, Dr. J. S. *See* *Dunstones*
 Flexman, Rev. Adam, 125
 Flory, Elenor, 298
 Folford, Baldwin, 214
Folk-songs of the West (Baring-Gould), 39
 Folley: A., 33; J. D., 33
FONTS: *Baptismal, of Devon* (Clarke), 302; with circular bowls, 303; with fluted bowls, 305; honeysuckle, 312; pedestal, 302; Romanesque, 304; with volutes, 312
Fonts of Devon: Abbots Bickington, 306; Abbotsham, 307-10; Ashprington, 313, 316; Beaford, 308, 310; Bideford, 305; Bishopsteignton, 313; Blackauton, 313, 315, 316; Bradford, 310; Buckfastleigh, 313, 314; Buckland-in-the-Moor, 313; Bulkworthy, 306; Cheriton Bishop, 305; Clayhanger, 309; Coffinswell, 313; Combe-in-Teignhead, 313; Cornworthy, 313, 316; Dartmouth (St. Petrock's), 313, 317; Denbury, 317, 318; Dittisham, 311, 317; Exeter (St. Mary Steps), 305; Farringdon, 305; Harberton, 305, 307; Loddiswell, 312; Monkleigh, 303; Paignton (St. Andrew's), 313, 315; Parkham, 309; Plymstock, 318; Putford, (East), 306, 307; (West), 306; Rattery, 311; South Brent, 313, 316; Southpool, 310, 311, 313; Thurlestone, 313, 315; Twitchen, 304; Ugborough, 313, 314; West Anstey, 313; Wolborough, 313, 315; dimensions of fonts, 319
Fonts: Fowey (Cornwall), 312; Lanreath (Cornwall), 312; Withypool (Som.), 304
 Ford House (Newton Abbot): 327; William of Orange at, 338
 Fordhayes, 298
 Forficulodea, 267
Forsaken Merman (Arnold), 180
 Fortescue, Sir John, 211, 216
 Fortescue, Arms of, 119
 Foster, Murray T., 8, 25, 159
 Foukes, Walter, 297
 Fowell: Alice, 337; Edmund, 336, 340; John, 336
 Fowey, 201, 312
 Fowte, John, 121
 Fox: Charles H., 47; C. T., 121, 122; George, 121, 122; Mabel, 47; Colonel Reginald Wilson (obit.), 47
 Francken, W. A., 25
 Freeman: Prof., 341, 342, 347; his *History of Exeter*, 341
 Fremington, 137, 138
 Frithelstock, 115, 117, 120
 Froude: Ashley A., 8, 9; J. A., 9, 28
 Fry: Barnard, 290; Bernard, 295; Joan, 290, 293, 295; John, 290; Mary, 335; Nicholas, 335; William, 335, 340
 Fry, Arms of, 296
 Fulford in Dunsford, 331
 Fulford, Sir Francis, 322, 331, 340
 Fungi, List of, 149
 Furzy-down, 181
 Gadidæ, Stuart Thomson's researches on, 65
Gadus virens (Coal-fish), 65
 Gairdner, Mr., 211
 Gale, Thomas, 200, 213
 Gambon, Robert, 200
 Garstang: W., 70; his researches, 70, 74

- Gaunt, John of, 177
 Gay, J., 137
 Gaza, on Fieldfares, 287
 Genoa, 214
Gentleman's Magazine, 293
 Genwissa, daughter of Emperor Claudius, 343
 Geoffrey of Monmouth : 344, 345, 348-50, 362; his *Historia Britonum*, 344
 Geographical Society, The Royal, 46
 Geological Survey Memoir, Plymouth. *See Dunstones*
 George V : 45, 112; visits Ugbrooke Park, 45
Germans in England (Colvin), 199
 Gerrard, Sir Gilbert, 329
 Gibbs : John, 297, 298; Richard, 298
 Gidley, John, 342
 Giffard, Thomas, 214
 Giles, Sir Edward, 322, 330, 340; John, 322, 330
 Gill : Rev. John, 159; Miss, 143, 144
 Gillard, A., 39
 Glanville : Alice, 337; Sir Francis, 337; Sir John, 323, 324
 Godeshulle (I. of Wight), 182
 Goldsmith's *Animated Nature*, 284
 Goodrington, 150
 Goose, A., 128
 Gorges, T. de, 182
 Goring, Lord, 196
 Goshawks, 287
 Gosse, Philip, 56; on *British Anemones*, 56
 Gotto, Rev. Edward Robert, 50
 Gould : Elizabeth, 335; William, 335
 Grampound, 331, 332
 Grandison, Bishop, 264
 Grasshoppers : 273-6; Bramble, 274
 Great Torrington, 117, 131
 Green, J. R., 347
 Grigg, Thomas, 301
 Grimsby, 56
 Grimstone (Whitchurch), 47
 Grit. *See Dunstones*
 Grover, C., 159
 Gryllodea, 271
 Guernsey, 337
 Guppy, Dr. H. B., 152
 Gurney, Richard, 132
 Gwent, Owen of, 178
 Gweyrydd, General, 346
 Gyfiard, John, 216
 Hadden, Norman G., 139, 142, 150, 151
 Haddock, life history of, 80, 81
Hafod Chronicle, 347
 Hakluyt Society, 46
 Haldon : 176; Battle of, 176
 Hales, John, 335, 336, 340
 Halifax, Lord, 338
 Hallett : Jane, 299-301; John, 294, 298; Richard, 294; Richard Hothersall, 294, 299-301; Southcott, 294, 299-301
 Hallett of Stedcombe : Pedigree of, 294; Jane, will of, 301
 Halsbury, Earl of, 8, 9
 Halton (Cornwall), 334
 Halwell, James, 108
 Halwell, Halwill, 102, 103, 108
 Halwell Wood : 284; Spoonbills and herons in, 284
 Hamilton, A. H. A., 9, 28
 Hansford, R. W., 160
 Harberton, 305, 307
 Harbord, Sir Charles, 328
 Hardwick, Henry, 102, 109
 Hare, Mrs. Marcus, 159
 Harestone, Silverlock of, 182
 Harewood (Calstock), 336
 Harford, 300
 Harlech Castle, 192
Harleian Miscellanies, 334
 Harpereswell, 195
 Harpford, 145, 146, 300
 Harpley, Rev. W., 9
 Harris : G. T., 25, 145, 146; Mrs. J. P., 52
 Hart, Mr., 137
 Harte, W. J., 8
 Hartland, 137
 Harvey, Rev. H. H., 143, 144
 Hatherleigh, 144
 Hatsell, Henry, 335, 336, 340
 Hawker, Rev. Treasurer, 9
 Haydon, Benjamin Robert, 39
 Hayne (Newton St. Cyres), 336
 Headon Wood, 185, 186
 Head-down, 181
 Head Weir, 159, 161-73
 Heanton Punchardon, 138
 Heanton Satchville, 324, 327, 332, 335, 338
 Heincke : Fr., 67; his researches, 67
 Hele : Joan, 332; Thomas, 332
 Hemiock, 296
 Hennock, 146
 Henry : I, 34; III, 34, 198; IV, 31, 34; VI, 182, 205, 208, 209, 214, 215, 260; VIII, 34, 197, 262
 Hereford, 262
 Herrick, 322
 Herring : life history of, 76-80; the Norwegian Spring, 77-80; age of, 78

- Hertford Castle, 191
 Hicking, Rev. J., 139
 Hicks, Joseph, 116, 129
 Hiern, W. P., 8, 25, 53, 137
 Highampton, 86
 High Bickington, 115, 117, 122
 High Peak, 145
 Highweek, 149
Hind and Panther, The (Dryden), 43
 Hinden, 338
 Hine, J., 9
 Hingston, C. A., 8
 Hingston Down, Battle of, 179
Historia Britonum, 344
 HISTORIES: of *Devon* (Lysons), 293; (Worth), 349; of *Exeter* (Freeman), 341; (Oliver), 343; *Fifteenth Century* (Ramsay), 199; of *Royal Navy* (Clowes), 205, 206
 Hitt, James, 298
 Hjort, Johan, his researches, 63, 64, 76
 Hoblyn: Jane, 114; John, 114; Arms of, 114, 134
 Hockin, W., 129
 Hodgson, T. V., 8, 25, 36, 37, 39
 Hoe, Plymouth, 55
 Hoffbauer: C., 65; his researches, 65
 Hoker, *alias* Vowell, 348
 Holbeton: family of, 181; V, 187
 Hole, Branscombe, 291
 Hole: Rev. H. D., 33, 36; describes Plympton St. Maurice Church, 36
 Holford, Thomas, 120
 Hollacombe, 102, 109
 Hollerday Hill, 140-3
 Holley, Maj.-Gen. G. H., 159
 Hollier, John, 39
 Holmes, E. M., 153
 Holne, 159, 161-73
 Holworthy: 101-03, 109; Rural Deanery of, 101, 133, 134; Church Plate in, 101-03
 Holway, Peter, 296
 Holway, Arms of, 296
 Honiton: 9, 145, 321, 325, 336; Botanical District, 145
 Hore, Herbert W. S., 146, 149, 153
 Horndon, Rev. David, 127
 Hosking, Henry, 113
 Hospital: of St. John, Exeter, 47; of St. John and St. Elizabeth, London, 45
 Hothersall, Meliora, 294
 Houston, George, 127
 How, George, 328
 Howard, Lady, 338
 Howarth, Frank, 159
 Howel Down: 176; Battle of, 176
 Howel: king of Dyfed, 174, 176; the Good, 178; king of the West Welsh, 177
 Howell, Sarah, 299
 Huccaby, 159, 161-73
Hudibras: (Butler), 44, 324; translation into French, 44
 Hudleston, W. H., 9
 Hughes, T. Cann, 8, 24, 25, 101
 Huish, 115, 117, 122, 332
 Hull, 56
 Hull: Sir Edward, 214; Henry 214
 Hunnybun, E. W., 149
 Huntshaw, 115, 123, 144
 Hussey, Francis, 298
 Hutchinson, O., 181
 Iceland, 56
 Iddesleigh, 115, 124
 Ilchester, 344
 Ilfracombe, 9, 56, 137, 139, 159, 161-73
Illustrated Church Plate (Jackson), 112, 118, 119, 126
 Immigrant orthoptera, 269, 271, 278
 Indiho, 296
 Isca, 341
Issue Rolls (Exchequer), 210
 Ivybridge, 152
 Ivey: Joan, 290; Lucye, 297
 Jabyen, John, 30
 Jackson, George, 8
 Jackson's *Illustrated Church Plate*, 112, 118, 119, 126
 Jacobstowe, 144
 Jalborton Tor, 150
 Jamaica, 291
 James: I, 261, 321, 330; II, 321, 326, 329, 339
 Jeffry, Bartholomew, 193
 Jenkins, Rhys, 8
 Jerusalem, 341
 Joce, T. J., 8, 86
 Johansen, A. C.: his discoveries, 58; on the growth of Plaiice, 71, 72, 81
 John of Gaunt, 177
 John, King, 193
 Jones: John, 102, 107, 108, 109, 110, 112, 115, 119, 133, 135; Robert, 127
 Jordan: Mrs. Flora, 8; W. F. C., 8
Journal of Botany, 138, 139, 146-8, 152, 153
 Judhel (Juhel) de Totnenesse: 192; his lands in Devon, 192; entry in *Exeter Domesday*, 192; builds Totnes Castle, 192

- Julian, Mrs. Forbes, 8
 Juthwal, 178

 Kairpen-Huelgoit : 346, 348, 349, 362
Kairpen-Huelgoit ; which is called
Exeter (Martin), 341
 Keith, Charles, 131
 Kennet-Were : Thomas (obit.), 54 ;
 his public services, 54
 Kennick, 160, 161-73
 Kentisbeare, 300
 Kentisbury, 138
 Kenton, 145, 333, 340
 Kerslake : Thomas, 348, 349, 361,
 362 ; his *A Primæval British*
 Metropolis, 347, 349
 Kidd, Capt. (of Greenock), 212
 Kilmington, 290-4, 297-301
 Kilmington Church : Southcott
 monuments in, 295, 296 ; monu-
 mental inscription, 296
 King, R. J., 9
 Kingdon, Roger, 109
 Kingsbridge, 9, 55, 86
 Kingskerswell, 146, 149
 Kingsley, Rev. Charles, 9, 28
 Kingsnympton, 336, 337, 340
 Kingswear, 214
 Kingwell, C. M., 160
 Kitley, 180
 Knight, Stephen, 186
 Krogh, his discoveries, 58
 Kydde, William, 212

 Lake : John, 211, 216 ; W. C.,
 160
 Lambe, John, 122
 Lamerton, 153
 Lancaster, Duchy of, 53
 Landkey, 137
 Landrails, 289
 Landrake (Cornwall), 334, 340
 Langford : Roger de, 181 ; family
 of, 182
 Langtree, 116, 124
 Lanreath (Cornwall), 312
 Laployd, 160, 161-73
 Larter, Miss C. E., 8, 24, 25, 85,
 86, 137, 144-9, 151, 152
 Laud, Archbishop, 265
 Launceston, 9, 183, 190, 196
 Laycock : C. H., 8, 24-6, 85, 86,
 137, 154 ; *Report of Committee on*
 Devon Verbal Provincialisms, 85
 Leach, Dr., 55
 Lecture at Plymouth Museum, 36
 Lee Bay, 140
 Lee : Roger, 125 ; R. M., 74 ; his
 researches, 74, 76
 Lee Woods, 140, 141

 Leland : 29, 195 ; his *Itinerary*,
 195 ; his description of Totnes
 Castle, 195
 Leofric, Bishop, 263
 Lethbridge, Sir Roper, 8, 9, 24-6,
 101
 Leusdon, 161-73
 Leveson-Gower : A. F. G., 19 ;
 restores silver flagon to Sowton
 Church, 19
 Ley, Rev. A., 138
 Leyden, 334
 Lichfield : 261 ; Bishop of, 261 ;
 his residence, 261
 Lincoln : 264 ; earl of, 335, 339
 Liskeard : 339 ; castle of, 190
 Literature, relating to Fishes, 82-4
 Little Torrington, 115, 117, 125
 Liverpool, 43
 Llandaff, Dean of (Dr. Conybeare),
 45
 Locustodea, 273
 Locusts, 278
 Loddiswell, 312
 London : 30, 32, 43, 106, 108, 110,
 114, 117, 210, 213, 214 ; Uni-
 versity of, 43 ; Castle, 191
 London Devonian Association : 32,
 37 ; tribute to Drake by, 37
 Londonderry, Earl of, 330
 Long, Rev. E. C., 86
 Longstaff, Mrs. G. B., 138
 Longstone : 41 ; Elford's of, 41
 Loram, James Ambrose, 47, 48
 Loughton, Manor of, 35
 Lowe, Harford J., 8
 Lowestoft Laboratory : 69 ; Wal-
 lace's researches at, 69
 Ludlow, Edmund, 328
 Luffincot, 102, 103, 110, 133, 134
 Lupton (Brixham), 335
 Luttrell, Arms of, 119
 Lydford, 34, 190, 196
 Lydiate Lane, 140
 Lyme Regis : 19, 145, 331 ; pro-
 posed meeting at, cancelled, 19
 Lymptone, 86
 Lynbridge : 141 ; Lane, 140
 Lyndale, 141
 Lyneham : 290 ; Cornu de, 182
 Lynham, 295
 Lynmouth, 140, 159, 161-73
 Lynton, 9, 50, 140, 142
 Lysons' *History of Devon*, 293

 Macaulay, Lord, 50
 Mackerel, life history of, 59, 60
 Mackenzie, L., 46
 Maestricht, 339
 Malborough, 152

- Maleveran, Sir Thomas, 34
 Mallet, Hugh, 124
 Malmesbury Abbey, 175
 Malmesbury, William of, 175, 176, 178
 Manchester, Earl of, 320
 Mapes, Walter de (poet), 344, 345
 Mapowder, Joanna, 112
 March, Frederick, 160
 Mardon, 160, 161-73
 Margaret of Anjou, wife of Hen. VI, 260
 Maristowe, 153, 332
 Marker : Elizabeth, 300 ; Mary, 300
 Marlborough, Duke of, 329, 331
 Marrais (Week St. Mary), 337
 Marshall, Rev. E. S., 137, 138, 144-9
 Martin, Hall and Co., 105, 130
 Martin, John May : 8 ; on *Kairpen-Huelgoit* : which is called *Exeter*, 341
 Martyr : Christopher, 325, 333, 334, 340 ; Nicholas, 324 ; Sir Nicholas, 332, 333, 340 ; William, 333
 Marvell, Andrew, 327
 Marwood, James, 301
 Mary : Queen, 45 ; visits Ugbrooke Park, 45
 Marystow, 340
 Mason, Samuel, 147
 Masterman's researches on Salmon, 66
 Matthew, Thomas, 102, 113, 115, 120, 132
 May : Bessie, 48 ; William, 48
 Mayflower Stone, Plymouth, 31
 Mayhow : Frances, 39 ; Jerome, 39 ; Richard, 39
 Mead-Briggs, T. H., 159
 Meadfoot, 151
 Meavy, 324
 Meeth, 116, 117, 125, 126
 Meetings : Places of, 9 ; Proceedings at Plymouth, 27
 Melhuish, Rev. G. D., 24, 85, 86
 Members of Parliament : Index of Names, 339 ; Schedule of, 330
 Membury, 340
 Menegh, 139
Men of the Time, 45
 Mepeham, Archbishop, 264
 Mercia, Burhred, King of, 178
 Merivale, Rev. C., 9
Merlin's Prophecies, 345
 Merton, 102, 111, 116, 126, 340
 Merton College, Oxford, 45
 Milber Down Woods, 149, 150
 Mill, John, 127
 Mill, Arms of, 118
 Mills, Rev. Canon H. Holroyd, 101, 133
 Milnes, William, 136
 Milton Damarell, 102, 110
 Misbury, 180
 Mistletoe-thrushes, 287
 Modbury, Battle of, 324, 331, 332
 Model Gate, 140
 Mohun : Matilda, 182 ; W., 182, 183
 Mohuns Ottery, 296
 Mole cricket, 272
 Molland, 144
Monasticon (Oliver), 39
 Monk : R. Rugg, 36 ; W. J., 160 ; Christopher, 326, 329 ; Christopher, earl of Torrington, 337, 340 ; George, 325, 329, 337, 340 ; General George, 326, 333, 335 ; Sir Thomas, 333
 Monkleigh, 303
 Monkswell, Lord, 9
 Monmouth, Duke of, 327, 338, 339
 Monmouth : Geoffrey of, 344, 345, 348-50, 362 ; his *Historia Britonum*, 344
 Montagu, Colonel, 55
 Monumental Inscriptions : Farringdon Church, 296 ; Kilmington Church, 295, 296 ; Offwell Church, 294, 295
 More : Hannah, 266 ; John, 214
 Moreton, C. H., 33
 Moretonhampstead : 43, 85 ; Deanery of, 51
 Morice : Evan, 333 ; Mary, 333 ; William, 329, 335 ; Sir William, 324, 332, 333, 336, 340
 Morley, Earls of, 40
 Morley, Lord, 200
 Morris : Rev. A. C., 137, 143, 144, 147 ; R. Burnet, 8, 26, 154
 Morshead, J. Y. A., 8 ; on the *History of Pustlinch*, 180
 Mortain, Earl, 180, 186
 Morte-hoe, 137, 138
 Moryn, John, 214
 Mt. Edgecumbe, Earl of, 8
 Moyle, Walter, 216
 Müll, P. J., 144
 Mundy : Dorothy, 300 ; Matthew, 300 ; Thomas, 300 ; W. L., 8
 Murray, O. A. R., 301
 Musbury, 293, 339
 Musci, 149
 Museum, Lecture at, 36
Mycetozoa, 142, 151

- Myth of Brutus the Trojan* (Worth), 347
Myvyrian Archæology, 347
- Nachez, Navidar (violinist), 45
Navy, History of the Royal (Clowes), 205, 206
 Neale, Richard, 119
 Neck, J. S., 8, 24
 Newfoundland, 43
 Newnham (Plympton St. Mary): 34-6, 331; description of, 35; Strodes of, 34; Old Newnham, 35; description of, 35; visit to, 35
 New Park, Axminster, 292
 Newport, 333
 Newton Abbot, 9, 51, 86, 146, 147, 149, 150, 159, 161-73
 Newton Ferrers, 180, 181, 183, 184, 187
 Newton St. Cyres, 336, 340
 Newton S. Petrock, 115, 127
 New York, 43
 Norfolk, Duke of, 211
 Norman Castles, 190, 191
 Northam, 138
 Northampton, 210
 North Bovey, 50, 51; *Notes on North Bovey and Neighbourhood* (Thornton), 51
 Northcote: John, 329, 337; Sir John, 336, 340; Susan, 336
 North Molton: 144; Parker family of, 39
 North Petherwyn, 132, 133, 135
Notes and Gleanings, 334
Notes and Queries, 52
Notes on North Bovey and Neighbourhood (Thornton), 51
Notitia Parliamentaria (Willis), 320
 Nourse, Rev. S. M., 25
 Novant, Henry de, 193
- Oake, Walter, 298
 Obituary Notices, 43
 Officers of Association, 8
 Offwell, 291, 293, 297, 300, 301
 Oggwell, East, 335
 Okehampton, 9, 143, 144, 159, 161-73, 190, 321
 Oliver: Dr., 342, 343; his *Monasticon*, 39
 Orange, William of: 327, 338; visits Ford House (Newton Abbot), 327
 Oriol College, Oxford, 291
Orthoptera of Devon (Bracken): 267; Acridioidea, 276; Blattodea, 269; Forficulodea, 267; Gryllodea, 271; Immigrant, 269, 271, 278; Locustodea, 273; Detailed Records, 279
 Otoliths (ear-stones) of fishes, 67; Reibisch's researches on, 67
 Otterton, 145
 Ottery St. Mary: 145, 146, 293, 294, 299, 300; Parish Registers of, 300
 Owen of Gwent, 178
 Owls: 284-6; short-eared, 285; wood, 286; tawny, 286
 Oxford, 45
 Oxtou, 324, 333
- Paignton, 9, 147, 149-51, 313, 315
 Pancrasweek, 101, 102, 111
Pardon Roll, 211
 Parfitt, E., 144, 267, 276
 Parish Registers, Ottery St. Mary, 300
 Parker: Edmund, 39; Francis, 39; John, 39
 Parkham, 109, 139, 309
 Park Hill Copse, 150
Parliament, Devon County Members of (Alexander): 320; sources of information, 320; boroughs represented, 320, 321; Index of Names, 339, Schedule of Members, 330
 PARLIAMENTS: Barebones, 325, 326, 328, 334; Little, 325; Long, 324, 326, 327, 333, 336; Pensionary, 326-8; Restoration, 326; Rump, 324, 333; Short, 324; Unlearned, 328; of James I, 330, 331; of Charles I, 331-3; of the Commonwealth, 333-7; of Charles II, 337; of James II, 339
 Parracombe, 103, 136
 Parry: George, 159; H. Lloyd, 25
Paston Letters, 199
 Partridge, J., 160
Patent Rolls, Calendar of, 199, 201, 210, 214, 216
 Peacock, H. G., 25, 137, 149
 Pearse: Anne, 297; Preston, 38
 Pearson: Rev. J. B., 8; on *The Canon in Residence*, 260
 Pease: John William, 47; Mabel, 47
 Peck, Miss C., 25, 137, 146, 148
 Pedigrees: of Hallett of Stedcombe, 294; of *Southcott of Dulcishayes* (Skinner), 290
 Peek, Lady, 159
 Pendower, 47
 Pengelly, W., 9
 Penholtkeyre, 341-3, 347, 350

- Penhulgoite, 342
 Pennehaltecaire, 342
 Pennecaire, 342
 Pensauelcoit, 348
 Penselwood, 348-51
 Pentin, Rev. Herbert, 20
 Peryam : Jane, 336 ; Sir John, 336
 Petersen, Dr., of Copenhagen, his researches, 63, 64
 Petersmarland, 116, 127
 Petherwin, North, 132, 133, 135
 Petre : The Baron, 43 ; Agnes Catherine, 43 ; John, 297 ; Lord William, 297, 298
 Petrockstowe, 128, 332, 339, 340
 Pevensey Castle, 191
 Phear, Sir J. B., 9
 Phillmore's *Ecclesiastical Law*, 264
 Phillpotts : Eden, 39 ; Henry (Bishop), 263
 Pilgrim's Way, 351
 Pillow structure. *See Dunstones*
 Pilton : East, 137 ; West, 138
 Pitt-Rivers, Lieut.-General A., 361
 Places of Meetings, 9
 Plaice : average sizes of (Wallace), 73 ; life history of, 62, 66, 67, 69-76 ; Wallace's researches on, 69, 70
 Platway, Shaldon, 45
 Plimton, St. Peter of, 39
 Pliny on Woodpeckers, 283
 PLYMOUTH : 9, 19, 27-9, 36, 38, 39, 42, 48, 49, 56, 153, 184, 321, 323, 325, 333, 335-7, 340 ; Proceedings at Meeting at, 27 ; St. Andrew's Church, 29-31 ; *Prysten House*, 31 ; The Abbey, 31 ; St. Andrew's Street, 31 ; Old Houses in, 31 ; The Barbican, 31 ; New Street, 31 ; West Pier, 31 ; *Mayflower* Stone, 31 ; The Pool, 31 ; Lambhay Street, 31 ; Castle, 31 ; The Hoe, 31 ; Sutton Pool, 31 ; Charles Ward, 48 ; Drake's Ward, 48 ; extension of borough boundaries, 48 ; Queen Victoria's Diamond Jubilee celebration and memorial, 48 ; foundation of Museum and Art Gallery, 48 ; Free Library and Art Museum, 48 ; Observatory, 159, 161-73 ; Botanical District, 152 ; Watershed, 159, 161-73 ; Bishop of (Rev. John Keily), 8 ; Mayor of, 8, 27 ; Reception of Association by, 27 ; *History of* (Worth) ; *Ecclesiastical History of* (Rowe), 29 ; *The Dunstones of*, 217 ; *Geological Survey Memoir*, 218
 Plympton : 9, 33-5, 189, 321, 325, 332 ; Castle, 33, 34, 189 ; visit to, 33
 Plympton St. Mary, 336, 340
 Plympton St. Maurice : 33, 334, 340 ; Church of, 36 ; described by Rev. H. D. Hole, 36
 Plymstock, 318
 Plymtree, 300
 Pode, J. D., 25
 Poitiers, 182
 Pole : John, 201, 214 ; Sir John, 322, 331, 340 ; Sir William, 331
 Pollard : Hugh, 329 ; Sir Hugh, 327, 336, 337, 340 ; Sir Lewis, 337 ; Margaret, 337 ; Susan, 336
 Pollock, Sir F., 8, 9
 Poltimore, 331, 338, 339
 Ponsford : Mary, 292, 298 ; William, 292
 Ponsonby, Rev. Preb., 8
 Pont-Ivel-Coit, 344
 Poole, 207
 Pope, M., 159
 Popham, Radford and Co., 48
 Popkin, 293
 Port Royal, Jamaica, 291
 Poselyynche : Anne de, 152 ; John de, 182 ; Matilda, 184 ; Roger de, 182
 Posidonius, 351
 Poste, Beale, 349
 Potheridge (Merton), 333, 337
 Potterne : 261 ; Prebend of, 261
 Powderham, 291, 331, 338, 339
 Powell, Rev. J. R., 119
 Praed, James, 339
 Prance, H. Penrose, 8
 Pratt, Miss H. E., 146
Presidential Address (Allen), 55
 Presidents, List of, 9
 Presteton, 181
 Prickman, J. D., 143
 Pride, Colonel, 324
 Prideaux : Miss E. K., 114 ; on *Sutcombe Church*, 114 ; John, 113
 Prigg, H. Victor, 159
Primæval British Metropolis, A (Kerslake), 347, 349
 Prince of Wales : 29 ; Lord High Steward of Plymouth, 29 ; his staff of office, 29
 Prince's *Worthies*, 330
 Princetown, 9, 159, 161-73
 Proceedings at Plymouth Meeting, 27
 Prouse, O., 159
 Provincialisms of Devon, *Report of Committee on* (Laycock), 85
 Prowse, Col. Arthur B., 8, 25, 26, 137

- Pulman : Mary, 300 ; Thomas, 300
 Purchas, John, 211, 216
 Puslinch : 181, 182 ; various spellings of the name, 181 ; its derivation, 181 ; *History of* (Morshead), 180 ; date of T. de Veteri Ponte's ownership, 187 ; Wasita Ferrer's Fee, 188 ; Puslinch Bridge, 181, 183
 Putford : East, 102, 111, 306, 307 ; West, 102, 103, 111, 116, 126, 306, 333, 340
 Putt : Reymundo, 300 ; Thomas, 299, 300
 Pykeryng, Rauly, 202
 Pym, John, 323, 324, 334, 335
 Pyworthy : 101-03, 112 ; St. Swithun's Church at, 112

 Quicke, John, 335, 336, 340

 Radford : A. J. V., 25, 101 ; A. L., 8, 25 ; Sir Charles Horace, 48, 49 ; his public services, 49 ; (obit.), 48 ; Constance M., 160 ; George David, 48 ; Lady, 8, 24, 26, 154
 Raine, Richard, 113
 Ramsay : Rev. H. F., 160 ; Sir James, 199, 200, 209-11 ; his *Century of English History* (1399-1485), 207, 208, 211 ; his *History of the Fifteenth Century*, 199
 Ramsgate, 56
 Randolph, Hingeston, 264
Ranunculus acris, 38
 Rattery, 311
 Raune, John (of Kingswear), 214
 Read, Rev. T., 139
 Reading, 48
 Records of Orthoptera, Detailed, 279
 Redeke, H. C., his researches, 62
 Redwings, 287, 288
 Reed, Harbottle, 8, 25, 101
 Registers of the Bishops of Exeter, 53
 Reibisch, J., his researches on Otoliths, 67
 Reichel : L. H., 86 ; Rev. O. J., 8, 24-6, 85, 86, 101
Reminiscences of a West Country Clergyman (Thornton), 51
Reminiscences of the Wykes of South Tawton (Thornton), 51
 REPORTS : of Committees ; Barrows (Worth), 99 ; Bibliography (Morris), 154 ; Botany (Hiern), 137 ; Church Plate (Chanter), 101 ; Climate (Worth), 157 ; Verbal Provincialisms (Laycock), 85
 Report of the Council, 19
Residencier : 260 ; the use of the term, 260
 Restormel Castle, 190
 Reynell : Sir Richard, 335 ; Thomas, 335, 336, 340 ; Walter, 211, 216
 Reynolds : Sir Joshua, 33 ; his portrait, 33
Rhammatocerus, 276
 Richard of Cirencester, 349
 Richborough, 346
 Ridgeway : Baron, 330 ; Thomas, 329 ; Sir Thomas, 321, 322, 330, 340
 Ringmoor : 99 ; stone circle on, 99
 Risdon, 343
 RIVERS : Allen, 190 ; Dart, 189 ; Exe, 189 ; Fal, 190 ; Fowey, 190 ; Looe, 189, 190 ; Lynher, 189, 190 ; Plym, 189 ; Tamar, 189, 190 ; Taw, 190 ; Teign, 189
 Robertson, Dr. (Bishop of Exeter), 8, 9
 Roborough : 115, 128, 161-73 ; Down, 35 ; Reservoir, 159
 Rock, William Frederick, 52
 Rolle : Andrew, 337 ; Arabella, 339 ; Courtenay, 327 ; Dennis, 337 ; Florence, 337 ; Francis, 325 ; Henry (of Abbots Bickington), 103 ; Joan, 332 ; John, 131, 327 ; Sir John, 337, 340 ; Louisa, Lady, 121 ; Margaret, 335, 339 ; Robert, 128, 332, 335-7, 339, 340 ; Samuel, 327, 338-40 ; Sir Samuel, 324, 332, 335, 340
 Rolle, Arms of, 104
 Rolles, Philip, 134
 Rolygus, Mayor of, 210
Roman Britain (Conybeare), 351
 Rome, 341, 350
 Rose-Troup, Mrs., 8, 24-6, 85
 Round, Horace, 190
 Rousdon : 161-73 ; The Observatory, 159
 Rouse : Sir Anthony, 334, 335 ; Dorothy, 335 ; Francis, 328, 329, 333-5, 340
 Rowe : J. Brooking, 9, 33 ; on the *Ecclesiastical History of Plymouth*, 29 ; Mrs. J., 33
 Rowley, F. R., 25
 Rugby School, 50
 Rules, 10

- RURAL DEANERIES : Church Plate in Holsworthy, 101 ; Torrington, 101 ; Trigg Major, 132
 Russell, Earl, 9
 Rye-lands, 180
- Saffin : Anne, 292 ; Dorothy, 292, 298 ; Elizabeth, 292, 298 ; George, 292 ; Mary, 292, 297, 298 ; Penelope, 292 ; Penelope, 298 ; Simon, 292 ; Thomas, 292, 298 ; William, 292
- Saffin, Arms of, 292
- St. Andrew's, Bishop of, 211
- St. Andrew's Church (Plymouth) : 29, 30 ; description of, 29 ; R. N. Worth on, 30 ; heroes connected with, 30, 31 ; Chantry of St. John the Baptist in, 30
- St. Cyres, Viscount, 8, 9
- St. Germans, Conan, bishop of, 175
- St. Giles in the Heath, 132, 134
- St. Giles in the Wood, 117, 121, 122, 337, 340
- St. Ives (Cornwall), 339
- St. John : Hope, 190 ; Oliver, 324
- St. John's Hospital, Exeter, 47
- St. Martin's, Exeter, 292
- St. Mary Arches, Exeter, 291, 292
- St. Mary Church, 9, 86, 146-9, 151
- St. Paul's, Exeter, 292
- St. Paul's Cathedral, London, 263
- St. Peter of Plimton, 39
- St. Stephen-in-Brannel, 133
- St. Thomas (Exeter), 145
- Salcombe, 55, 152, 153, 160, 161-73
- Salisbury, 261, 263, 265
- Salmon : life history of, 66 ; Masterman's researches on, 66
- Saltash, 322, 330, 333
- Saltram, 39, 336
- Sampford Courtenay, 143
- Santiago (Galicia), 212
- Sars : G. O., 57 ; his discoveries, 57
- Saunders, Thomas, 333-6, 340
- Schalstein. *See Dunstones*
- Schedule of Members of Parliament, 330
- Scilly Isles : 176 ; subdued by Athelstan, 176
- Scobchester (Ashbury), 333
- Scotland, Constantine of, 178
- Scott, Sir Gilbert, 30
- Sea-fisheries of Devon : 56 ; their importance, 56
- Seaton, 9, 145, 146
- Seatoun, George, 108
- Seaward, Thomas, 300
- Seccombe, Richard, 134
- Servante, H., 120
- Seymour : Sir Edward, 321, 322, 324, 327, 328-32, 337, 338, 340 ; Elizabeth, 338 ; Henry, 328 ; Lord Edward, 193
- Seys, Evan (Recorder of Gloucester), 328
- Shaldon, 45
- Shapcott (Devon), 295
- Shapcott : Mary, 291, 295 ; Thomas, 291, 295 ; Urith, 291 ; *Pedigree of*, (Skinner), 296
- Shapcott, Arms of, 296
- Sharland, A., 25, 137, 145, 153
- Shaw-Lefevre, Rt. Hon. G. T., 361
- Shebbear, 116, 129
- Sheepstor : 39, 41, 42, 99 ; excursion to, 39, 41
- Sheepwash, 115, 116, 129
- Sheffield, 105, 130
- Sherwill, 139
- Shillingford, John, 342
- Shobrooke, 144
- Short Devonshire Stories* (Thorn-ton), 51
- Shovel, Sir Cloudesley, 184
- Shute, 331, 340
- Shute Leigh (Wellington), 47
- Sidbury, 146
- Sidmouth, 9, 54, 145, 160, 161-73
- Silverlock of Harestone, 182
- Simonsbath, 50, 160, 161-73
- Siward's Cross, 159, 161-73
- Skeat, Professor, 181
- Skelton, Sir John, 39
- Skinner : A. J. P., 8 ; on a *Pedigree of Shapcott of Dulcishayes*, 290 ; Miss E., 8
- Skippon, General Philip, 324
- Slade, Daniel, 108
- Slapton, 152
- Slates, altered. *See Dunstones*
- Smith, W. H., 38
- Smyth (of Kingswear) : 214 ; Bishop, 264
- Snell, H. J., 8
- Sole, life history of, 62
- Somerset, Duke of, 193, 328
- Somerset and Dorset Notes and Queries*, 294
- Songs and Ballads of the West* (Baring-Gould), 39
- Southampton, 54, 196, 207
- South Brent, 160, 161-73, 313, 316
- Southcote : Henry, 293 ; Jane, 294 ; Mary, 330 ; Michael, 293 ; Philip, 293 ; Thomas, 330 ; Southcotes of Bliborough (Lincoln), 293
- Southcott (Devon), 295

- SOUTHCOTT of Dulcishayes : *Pedigree* of (Skinner), 290 ; Arms of, 294-6 ; Barnard, 290 ; Dorothea, 295 ; Dorothy, 291 ; Sir Edward, 296 ; Elizabeth, 291, 296 ; Frances, 299, 300 ; Frances Fry, 293 ; George, 290-3, 295-300 ; Sir George, 296 ; Henry, 290, 291, 295, 297 ; Dr. Henry, 292 ; Jane, 292, 293, 297, 300 ; Joan, 290, 291, 293, 296, 299, 300 ; Joanna, 294 ; John, 290 ; Sir John, 296 ; Judge, 296 ; Mary, 290, 292, 296 ; Michael, 293, 295, 299, 300 ; Sir Popham, 296 ; Thomas, 290-5, 297-300 ; *Wills* : of George, 300 ; of Henry, 297 ; of Jane, 298 ; of Thomas, 297, 299
- South Hams, Birds of the District, 283
- South Molton : 9, 144, 160, 161-73 ; Botanical District, 144
- Southpool, 310, 311, 313
- South Tawton, Some Reminiscences of the Wykes of* (Thornton), 51
- Sownton : 145 ; Parish Church, 19 ; silver flagon, *tempo* Charles I, restored to, 19, 20
- Sparrow-hawks, 286
- Spendela, Viscount, 201, 214
- S.P.G.F.P., Bequest to, 292
- Spiller, Abraham, 301
- Spoonbills, 284
- Spyville, Adrian, 210
- Stafford : Margery, 332 ; Robert, 332
- Stallmoor, : 99 ; stone circle on, 99
- Standlake, John, 105
- Stanton : E. W., 147 ; R., 148
- Stebbing, Rev. T. R. R., 8, 9
- Stedcombe (Axmouth), 294, 301, 336
- Stephen, Clays, 214
- Stephens, Mrs. A. J., 53
- Stevens : Mrs. Christiana Maria, 127 ; John, 260 ; his petition to the King, 260
- Stevenson's *Letters and Papers illustrative of the Wars of the English and French* (*tempo* Hen. VI), 215
- Stevenstone, 103, 131, 327, 337
- Stoke-fleming, 182
- Stoke Gabriel, 150, 151
- Stoke-in-teignhead, 146-8
- Stokenham, 152
- Stoke Rivers, 137
- Stonehenge, 351
- Stonelands, 150
- Stonyhurst College, 43
- Stowford, 332
- Stridulation (Orthoptera), 271, 273
- Strode in Ermington, 34
- Strode : Major and Mrs., 34, 35 ; reception by, 34 ; Strode family of Newnham and Ermington, 34, 35 ; Joan, 332 ; Margaret, 336 ; Richard, 34 ; William, 34, 323, 324 ; Sir William, 321, 322, 331, 336, 340
- Stroud, Mr., 48
- Stuart, Mary, 292
- Stubbs, Dr. (Bishop of Truro), 9
- Stybbying, Nicholas, 214
- Sufferings of the Clergy* (Walker), 50
- Suffolk, Earl of, 208
- Suger, John, 114
- Sutcliffe, Edward, 132
- Sutcombe : 102, 103, 113 ; on *Sutcombe Church* (Prideaux), 114
- Sutton Harbour, 31
- Swallows, 288, 289
- Swallow-wort (Celandine), 288
- Swanton, E. W., 137, 146-8, 152
- Swedish nightingales (Redwings), 288
- Sweete : Margaret, 131 ; Richard, 333, 334, 340
- Sydenham, 324, 332
- Symes, John, 301
- Symons, William, 114
- Symons, Arms of, 114
- Takeda, H., 145, 146
- Talnas, 347, 349
- Tancred, Mrs., 52
- Taner : Edith, 291 ; George, 290 ; Mary, 297 ; Samuel, 290, 297
- Taner, Arms of, 296
- Tanner : Edith, 296 ; Francis, 296 ; George, 296 ; Isabella, 296 ; Samuel, 296, 298 ; Theodore, 298
- Tapley-Soper, H., 25, 26, 154, 343
- Tavistock : 9, 47, 86, 153, 160-73, 321, 323, 324, 336, 337, 340 ; Botanical District, 153
- "Tavistock" earwig (*Anisolabis annulipes*), 268
- Tawstock, 138, 339
- Taylor : Canon, 349 ; his *Transmission of Ancient Books to Modern Times*, 349, 350
- Teignmouth : 9, 149, 151 ; Observatory, 160-73
- Teign Naturalists' Field Club, 51
- Teign River, 284
- Tellam, Mr., 153

- Temple, Dr. (Bishop of Exeter), 9, 28
 Temple, The Middle, 44
 Test Act, The, 43
 Tetcott, 102, 103, 114, 133, 134
Tetrix : *bipunctatus*, 277 ; *subulatus*, 277
 Tewkesbury, Battle of, 183, 260
 Thanet, 346
 Thomson : Basil H., 9 ; Stuart, 65 ; his researches, 65
 Thornbury, 102, 114
 Thornton : John, 50 ; Rev. Robert, 50 ; Samuel, 50 ; Rev. William Henry, 49-51 ; (obit.), 49 ; his literary works, 51
 Thorpe, Richard (of London), 210
Three Towns' Bibliotheca (Worth) : 154, 155 ; Wright's Supplement to, 155
 Throwleigh, 148
 Thrushes, mistletoe, 287
 Thuborough, 113
 Thurlstone : 152, 313, 315 ; Marshes, 152
 Tintagel, 190
 Tiverton, 9, 46, 47, 53, 321, 325, 331, 338
 Torbay, 348
 Tormoham, 146-8, 340
 Torquay : 9, 56, 144, 150, 151 ; Observatory, 160, 161-73 ; Botanical District, 146 ; Watershed, 160, 161-73
 Torre : 181 ; Abbey, 330
 Torridge, Manor of, 35
 Torrington : 9, 115-17, 130, 160, 161-73 ; Botanical District, 143 ; Rural Deanery of, 101, 115
 Torrington, Earl, 326, 337, 340
 Tor Wood, 330
 TOTNES : 9, 160, 161-73, 192, 196-8, 320, 324, 325, 330-2, 338, 341, 347-9 ; Benedictine Priory at, 192, 197, 198 ; built by Judhael de Totnes, 192 ; Gates, 196, 198 ; Guildhall, 197, 198 ; Grammar School, 197, 198 ; description of Town Walls, 196-8 ; its military history (Lysons), 196 ; *Totnes Castle and Walled Town* (Whitley), 189 ; its Castle, 189, 193 ; description of, 193-5 ; Leland's description of, 195
 Totnes, Judhel de, 193
 Totonys, 347
 Towneley : Francis, 44 ; John, 44 ; Mabel Ann, 43 ; family of, 44 ; Collection of Arms and Statuary, 44
Transactions : Societies, etc., receiving free copies of, 20 ; stock in hand, 20
Transmissions of Ancient Books to Modern Times (Taylor), 350
 Trant, Miss Gladys, 38
 Treasurer : 8 : Statement of Accounts, 22, 23
 Treaty of Eamot, 174
 Trebigh, 339
 Tregawke : Davy, 183 ; Margaret, 183
 Tregony, 333, 334
 Trematon : 190 ; Castle, 189, 190
 Trentham, Rev. T. B., 133, 135
 Trevor, Sir John, 329
 Trigg Major, Deanery of, 101, 132
 Trinity College : (Cantab), 50 ; (Oxford), 293, 294
 Troup, Mrs. Rose, 8, 24-6, 85
 Truro : 334 ; Bishop of (Dr. Stubbs), 9
 Tucker, Major R. C., 8, 24
 Tuffs. *See Dunstones*
 Turney, J. Davy, 38
 Twitchen, 144, 304
 Twtnais, 347
 Tysilio : 345, 346 ; his *Brut Tysilio*, 345
 Uchtryd (bishop of Llandaff), 344
 Ugborough, 182, 313, 314
 Ugbrooke Park, 43, 45
 Umberleigh : 177 ; Athelstan's palace at, 177
 Upottery, 300
 Upton : Arthur, 335, 336, 340 ; Dorothy, 335 ; John, 183, 335 ; Mark, 184 ; Mary, 184 ; Nicholas, 183 ; William, 183
 Upton, Arms of, 184
 Upton Pyne, 336
Uridineæ, 150
Uredinales, List of, 139
 Usflete, John, 216
 Usher, Archbishop, 344
 Ussher, W. A. E. *See Dunstones*
 Valletort, family of, 181, 193
 Veer, Sir Robert, 210
 Vesicles. *See Dunstones*
 Vespasian, 341-3, 346, 348-51
 Veteriponte, T. de, 181
 Vice-Presidents of Association, 8
 Victoria, Queen : 48 ; Diamond Jubilee in Plymouth, 48
 Vincennes, 260
 Vincent : Sir Edgar, 9 ; Edward, 103
 Virginstow, 132, 133, 135

- Vowell, John (*alias* Hoker), 342
 Voysey, Bishop, 264
- Wadham College, Oxford, 290
- Wainwright: Capt. Ernest, 53;
 Louie, 53; Maud, 53; Thomas,
 52, 157, 159; (obit.), 52; on
Barnstaple Records, 52; on
Barnstaple Parish Register, 52;
 Mrs., 145, 148
- Waleran, Baron, 53
- Wales: National Library of, 19;
 to receive free copies of *Trans-
 actions*, 19
- Wales: Prince of, 29; Lord High
 Steward of Plymouth, 29; his
 staff of office, 29
- Walker: Hon. Col. James, 291;
 Mary, 291; Penelope, 292;
 Robert, 291; Sir Thomas, 291
- Walker's *Sufferings of the Clergy*, 50
- Wallace: Dr. W., 69, 70, 72, 75, 76;
 his researches, 70, 71, 76; his
 researches on plaice, 69; on the
 average size of plaice, 73
- Walled Towns and Castles of Devon
 and Cornwall: 189-93; Barn-
 staple, 196; Exeter, 196;
 Launceston, 196; Lydford, 196;
 Totnes, 196
- Waller: Margaret, 338; Sir Wil-
 liam, 338
- Walpole: Margaret, 339; Robert,
 339
- Walreddon, 338
- Walrond: Edmund, 291; Thomas,
 216; Hon. William Lionel
 Charles, 53, 54; (obit.), 53;
 William George Hood, 53
- Ward: Rev. J. H., 8; Seth
 (Bishop), 265
- Warren: Rev. G., 139; Rev. J.,
 139
- Watersmeet, 138, 141, 142
- Watkin, H. R., 8, 25
- Watts: H. V. I., 8; Professor.
See Dunstones
- Way, Thomas, 298
- Weare, Giffard, 143
- Weather of 1915, Table of, 159
- Webber, J., 123
- Wedgwood, Mrs., 152
- Weekes, Miss Lega, 8
- Weekly Journal, The*, 39
- Welcombe, 138
- Welles, Samuel, 111
- Wellington (Som.), 47
- Wells, Lionel, 13, 86
- Welsh Castles, 192
- Wembury, 39, 153
- Wenyngham, Robert; *an old Sea
 Dog of Devon* (Clifford): 199;
 chief sources of information, 199;
 Robert, 199-216; Mayor of
 Dartmouth, 200; M.P. for Dart-
 mouth, 200; Receiver of Dues,
 200; Collector of Customs, 200;
 his letter to Thomas Daniel, 202,
 203; various spellings of the
 name, 201
- Werrington, 132, 133, 136, 333
- West Alvington, 152, 335, 339, 340
- West Anstey, 313
- West Buckland, 144
- West: G. S., 139, 153; on *British
 Fresh Water Algae*, 139
- Western, Thomas, 127
- Westleigh, 138
- Westminster School, 45
- West Pier of Sutton Harbour, 31
- West Putford, 102, 103, 111, 116,
 126
- Westwood: Mr., 56; on *British
 Sessile-eyed Crustacea*, 56
- Wethamsted, 211
- Weymouth, R. F., 9
- Whipham: Charles, 121, 125;
 Thomas, 125
- Whitchurch, 47
- White-Thomson, Sir R. T., 8
- White Sea, 56
- Whitley: H. Michell, 8, 19, 24, 33,
 199; appointed additional secre-
 tary, 19; describes Plympton
 Castle, 33, 34; on *Totnes Castle
 and Walled Town*, 189
- Whitstanton, 335
- Whittle (Essex), 290, 297
- Widecombe Fair* (Eden Phillpotts),
 39
- Wilberforce, William, 50
- Wilford, Robert, 214
- Wilks, Miss, 33
- William: I, 192; II, 193; III, 340
- William of Malmesbury: 175-8;
 his account of Athelstan, 175, 176
- Williams: F. N., 148; Zachariah,
 120
- Willis: Browne, 320; his *Notitia
 Parliamentaria*, 320; his list of
 Speakers, 328
- Wills*, etc., stock in hand, 20
- WILLS: Jane Hallett, 301; George
 Southcott, 300; Henry South-
 cott, 298; Thomas Southcott,
 297, 299
- Wilsone, Mr., 159
- Winchester, 262, 351
- Windeatt: E., 8, 25, 28; Major
 George, 8, 25, 101

- Windsor, Dean and Canons of, 299
 Winnicott, J. F., 8
 Winnington, Robert (the Pirate), 208
 Wippell, J., and Co., 120-2, 130
 Witham (Essex), 296
 Withycomb, 297
 Withypool (Som.), 304
 Wolborough, 147, 150, 313, 315
 Woodbury, 145, 146
 Woodcocks, 284, 285
 Woodford, Manor of, 39
 Woodhouse, H. B. S., 8, 24
 Woodpeckers, 283
 Woody Bay : 141 ; Woods, 140
 Woolacombe, 160, 161-73
 Woolfardisworthy, 292
 Woolcombe : Rev. A. A., 159 ; G. D., 8, 25, 86 ; J. Y., 8 ; W. J., 33
 Woolmer, Francis, 297
 Worcester, William of, 208, 209
 Worfelhammes (Worswell), 182
World Encompassed, The (Drake), 332
 Worswell (Worfelhammes), 182
 Worth : R. Hansford, 8, 24, 25, 27, 29, 31, 36, 37, 39, 42, 99, 157 ; describes St. Andrew's Church, Plymouth, 29 ; describes Borringdon House, 39 ; on *The Dunstones of Plymouth and the Compton-Efford Grit*, 217 ; Report of the Committee on the *Barrows of Devon*, 99 ; on the *Climate of Devon*, 157
 Worth : R. N., 9, 30, 347-9 ; on *St. Andrew's Church, Plymouth*, 30 ; his *Myth of Brutus the Trojan*, 347 ; his *Three Towns' Bibliotheca*, 154, 155 ; his *History of Plymouth*, 29. *See also Dunstones*
Worthies (Prince), 330
 Worthington, A. M., 8, 9
 Wotter Clay Works : 39-41 ; excursion to, 39 ; process of winning clay, 40
 Wrey : Bouchier, 329 ; Sir Bouchier, 327, 339, 340 ; Sir Chichester, 339
 Wright : Charles, 108, 121, 125 ; W. H. K., 155 ; his Supplement to Worth's *Bibliotheca Devonensis*, 155
Wykes of South Tawton, Some Reminiscences of (Thornton), 51
 Wylie, E. D., 159
 Wyllyngton, Wymyngton, Wynyngton, Robert, 201, 202, 215
 Wyse : Margaret, 335 ; Thomas, 216, 324, 332, 340 ; Sir Thomas, 332, 335
Xiphidium dorsale, 275
 Yarmouth, 56
 Yarnscombe, 115, 116, 132
 Yarty (Membury), 335
 Yelverton, 42, 49
 Yeo, Richard, 123
 Yeo, Arms of, 123
 Yealmbridge, 186
 Yealmpton, 180, 183
 Yeolmbridge, 136
 Yogge : John, 29 ; Thomas, 29, 30 ; William, 29
 Yonge : J. B., 186, 187 ; Jane, 336 ; John, 335 ; Sir John, 336, 340 ; Mary, 335 ; Walter, 336
 York : 262, 263 ; Duke of, 211
 Young : James, 109 ; Thomas, 30
 Ypres, 209, 216
 Zouche, John, Lord, 193

June 1922 (Ending)

24th — 19 — 136.

25th — 137 — 188.

26th — 189 — 278.

27th — 279 — 362.

